
**DATA VALIDATION AND STATISTICAL
EVALUATION OF JUNE 2009
GROUNDWATER QUALITY DATA

CITY OF HELENA LANDFILL**

Prepared For:

**CITY OF HELENA
HELENA, MONTANA**



Hydrometrics, Inc.
consulting scientists and engineers

AUGUST 2009



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consulting scientists and engineers

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August 27, 2009

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AUG 31 2009

Dept. of Environ. Quality
Waste & Underground
Tank Management Bureau

Mr. Martin Van Oort
Environmental Science Specialist
Solid Waste Regulatory Program
Montana Department of Environmental Quality
P.O. Box 200901
Helena, MT 59620-0901

RE: Statistical Evaluation of June 2009 Groundwater Quality Data

Dear Martin,

On behalf of the City of Helena, Hydrometrics validated and statistically evaluated groundwater quality data for samples collected at the City's municipal landfill in June 2009. After receiving approval from John Rundquist and Ben Sautter of the City of Helena, I am forwarding a copy of the report "Data Validation and Statistical Evaluation of June 2009 Groundwater Quality Data City of Helena Landfill" for your review.

If you have any questions concerning this report, please don't hesitate to call.

Sincerely,

Jodi Bingham, P.E.
Environmental Engineer/Chemist

Enclosure

c: John Rundquist, City of Helena, without Enclosure
Ben Sautter, City of Helena, without Enclosure
Mike Wignot, Hydrometrics, without Enclosure

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Dept. of Enviro. Quality
Waste & Underground
Tank Management Bureau

Prepared for:

Mr. John Rundquist
CITY OF HELENA
City/County Building
316 North Park Avenue
Helena, MT 59623

Prepared by:

Hydrometrics, Inc.
3020 Bozeman Avenue
Helena, MT 59601

August 2009

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DATA VALIDATION AND STATISTICAL EVALUATION OF JUNE 2009 GROUNDWATER QUALITY DATA CITY OF HELENA LANDFILL

1. REPORT OBJECTIVES

This report is prepared on behalf of the City of Helena Landfill to fulfill the groundwater data evaluation requirements provided in Administrative Rules, Montana (ARM) Title 17, Chapter 50. This report provides analytical results for groundwater samples collected at monitoring wells during the June 2009 monitoring event, summarizes, the data validation results and statistically evaluates the data. The samples were collected and analyzed in accordance with the Montana Department of Environmental Quality (MDEQ) approved sampling and analysis plan (Hydrometrics, 2008). This plan includes a reduction in sampling compared to the previously approved sampling program.

ARM 17.50.708(12) and ARM 17.50.708(13) stipulate the types of statistical data evaluations to be performed on groundwater quality monitoring data from regulated landfills. Federal guidance on conducting statistical evaluations of groundwater data is also available (EPA, 1989; EPA, 1992). These regulations and guidance documents allow the use of a wide range of statistical procedures including: parametric analysis of variance, non-parametric analysis of variance, tolerance or prediction interval testing, trend tests, or other statistical tests meeting the statistical testing objectives of the rules.

Statistical evaluations have been performed for this site semiannually since 1993 and the following conclusions have been reached based on the results of those evaluations:

- Chlorinated hydrocarbons occur downgradient of the landfill;
- Tetrachloroethene (PCE) is the chlorinated organic compound of greatest concern due to Maximum Contaminant Level (MCL) exceedances;

- Concentrations of PCE are decreasing over time in well EPA-1, the well that has historically shown the highest concentrations, and compliance wells HL-90-1, HL-99-1, HL-99-2, and HL-99-3; and
- Elevated nitrate plus nitrite as N (nitrate) concentrations exist both upgradient and downgradient of the landfill at similar levels.

These findings are further evaluated in this June 2009 statistical report through an assessment of current concentrations (Table 3-1), a comparison of summary statistics (Tables 3-2 and 3-3), an inter-well prediction analysis (Table 3-4), and an examination of temporal trends (Table 3-5 and Figures 3-1 and 3-2).

2. SITE DESCRIPTION

2.1 PHYSICAL FEATURES

A site location map is provided in Figure 2-1. The landfill is surrounded for several miles in all directions by residential, commercial and industrial zoned property. There are several businesses upgradient of the landfill, which have the potential to affect groundwater quality in the area.

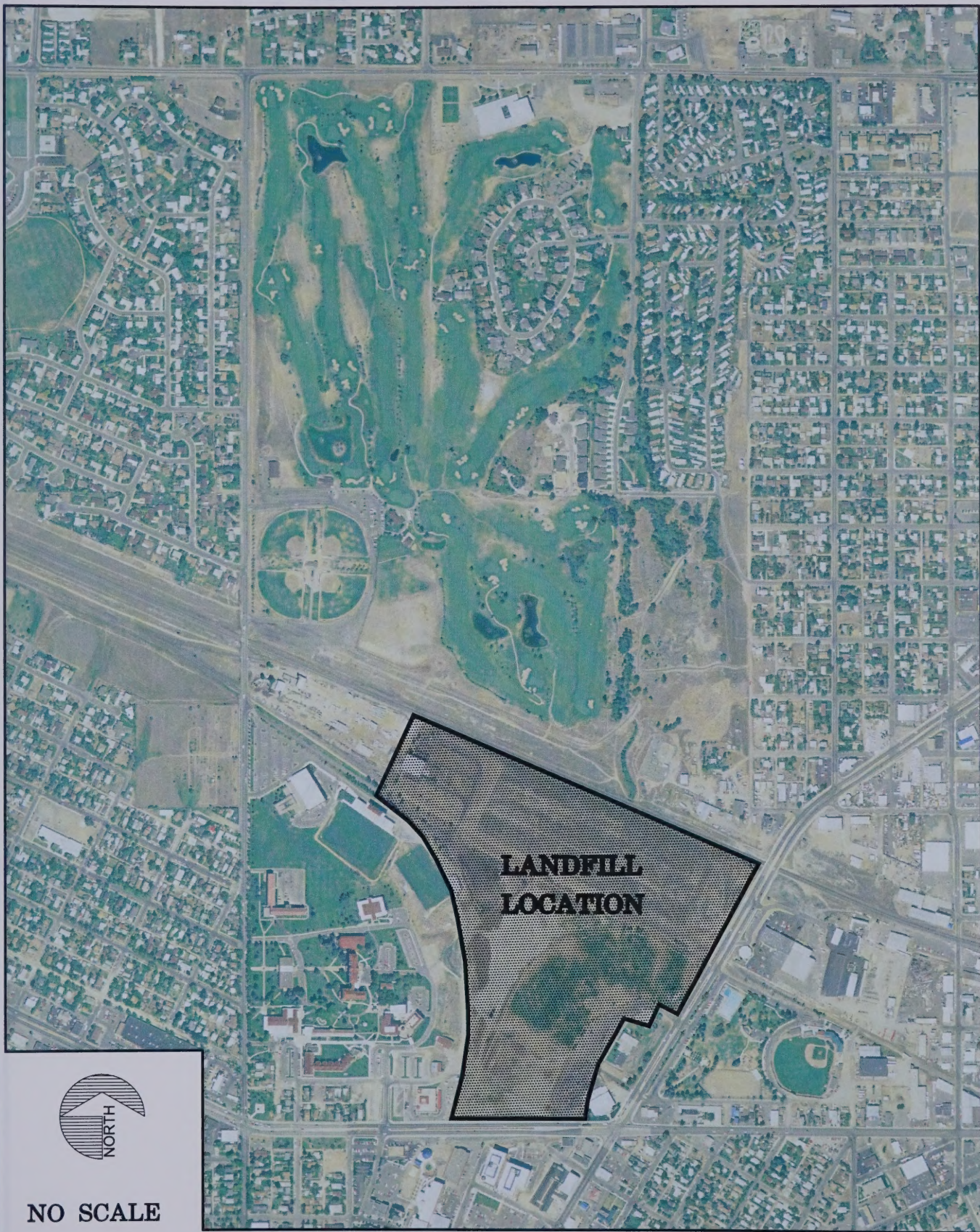
A site plan is shown on Figure 2-2. The landfill is divided into three sections. The southern part of the landfill (Phase I and Phase II sections) is unlined and was in operation until the early 1980s. The northern part of the landfill (Phase III) is also unlined, and was in operation until November 1993. The Phase III landfill has been capped with an 18-inch clay cover to minimize surface water percolation through the landfill and subsequent migration of chemicals into groundwater.

2.2 WELL LOCATIONS

Fourteen monitoring wells located around the landfill are typically included in the groundwater monitoring program and are characterized as follows:

- Background wells: HL-06-1 (replacing 83-6), HL-94-1R, HL-94-2, MPC-5;
- Downgradient wells: HL-90-1, HL-90-2, HL-90-3, MPC-1, MPC-2,
EPA-1, HL-99-1, HL-99-2, HL-99-3; and
- Cross-gradient well: HL-94-3.

As discussed in Section 2.4 and in accordance with the approved sampling and analysis plan (Hydrometrics, 2008), thirteen of these wells were sampled during the June sampling event. Well HL-94-2 was vandalized and could not be sampled due to an obstruction in the well. This well will be replaced prior to the next sampling event. The locations of these wells are shown in Figure 2-2. Due to damage sustained by well 83-6, this well was abandoned in October 2006 and a new well, HL-06-1, was drilled to replace this important upgradient well.



NO SCALE

CITY OF HELENA LANDFILL
DATA VALIDATION & STATISTICAL
EVALUATION OF JUNE 2009
GROUNDWATER QUALITY DATA

VICINITY MAP

FIGURE

2-1

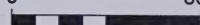


SITE CODE	DTWL	MPE	SWL
Jun-09			
HL-06-1	19.66	3993.62	3973.96
82-3	69.92	3973.51	3903.59
EPA-1	49.31	3981.08	3931.77
EPA-4	75.64	3973.83	3898.19
HL-90-1	59.10	3942.48	3883.38
HL-90-2	51.80	3950.96	3899.16
HL-90-3	66.54	3958.29	3891.75
HL-94-1R	60.88	3994.04	3933.16
HL-94-3	37.86	3967.38	3929.52
HL-99-1	71.20 * est.	3943.15	3871.95
HL-99-2	88.95	3945.75	3856.80
HL-99-3	73.22	3948.05	3874.83
INF. GALLE	6.23	3918.89	3912.66
I-1	65.92	3899.59	3833.67
MPC-1	24.85	3946.08	3921.23
MPC-2	18.78	3936.09	3917.31
MPC-5	59.26	3990.14	3930.88
* Estimated based on data previously collected at this site.			



SCALE

0 (In Feet) 800



LEGEND

- HL-1 ■ PIEZOMETER
- 83-6 ● MONITORING WELL
- I-6 ▲ IRRIGATION WELL
- 80 □ DOMESTIC WELL
- INFILTRATION GALLERY (GROUNDWATER COLLECTION SYSTEM)
- AREA OF SHALLOW LOW PERMEABILITY BEDROCK
- POTENTIOMETRIC CONTOUR LINE
- INFERRED GROUNDWATER FLOW DIRECTION
- STORM WATER OUTFALL FOR LAST CHANCE GULCH

**STUDY AREA AND JUNE 2009
POTENTIOMETRIC SURFACE**

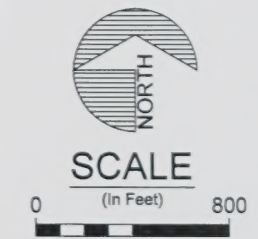
FIGURE

2-2



SITE CODE	DTWL	MPE	SWL
Jun-09			
HL-06-1	19.66	3993.62	3973.96
82-3	69.92	3973.51	3903.59
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INF. GALLE	6.23	3918.89	3912.66
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MPC-1	24.85	3946.08	3921.23
MPC-2	18.78	3936.09	3917.31
MPC-5	59.26	3990.14	3930.88

* Estimated based on data previously collected at this site.



- LEGEND**
- HL-1 ■ PIEZOMETER
 - 83-6 ● MONITORING WELL
 - I-6 ▲ IRRIGATION WELL
 - 60 □ DOMESTIC WELL
 - [Hatched Box] INFILTRATION GALLERY (GROUNDWATER COLLECTION SYSTEM)
 - [Orange Box] AREA OF SHALLOW LOW PERMEABILITY BEDROCK
 - 3900 — POTENTIOMETRIC CONTOUR LINE
 - ➔ INFERRED GROUNDWATER FLOW DIRECTION
 - ↘ STORM WATER OUTFALL FOR LAST CHANCE GULCH

CITY OF HELENA LANDFILL
DATA VALIDATION & STATISTICAL
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GROUNDWATER QUALITY DATA

STUDY AREA AND JUNE 2009
POTENTIOMETRIC SURFACE

FIGURE
2-2

For historical comparisons in this report, results from HL-06-1 and 83-6 will be included.

2.3 GROUNDWATER FLOW DIRECTION AND VELOCITY

Figure 2-2 shows water level elevations observed in June 2009 and groundwater potentiometric surface contours. Due to a blockage in well HL-99-1 and in order to present a more accurate representation of the potentiometric surface, the depth to water in HL-99-1 was estimated based on the results recorded for the previous three June groundwater sampling events. Groundwater flow direction is also shown on this figure. The general groundwater flow direction in the vicinity of the landfill is to the north-northwest. The potentiometric surface in the area of well HL-94-3 suggests that groundwater flows to the west northwest (Figure 2-2); thus, well HL-94-3 is not considered to be upgradient or downgradient of the landfill. Well HL-94-3 has, therefore, been designated as a “cross-gradient” well.

Table 2-1 shows the groundwater velocities calculated for each of the monitoring wells sampled during the June 2009 sampling event. Slope was determined from the potentiometric contours shown in Figure 2-2. The hydraulic conductivities were obtained from the groundwater flow model inputs included in the report “Evaluation of Groundwater Extraction Remediation Alternative at the Helena Landfill” (Hydrometrics, 1999a). The porosity for each well was assumed to be 0.25. An average regional gradient of 0.0234 ft/ft was determined between monitoring well HL-06-1 and I-1. This yields an average regional velocity of 0.736 ft/day.

TABLE 2-1. GROUNDWATER VELOCITIES

Well	Hydraulic Conductivity (ft/day)	Slope (ft/ft)	Velocity (ft/day)
EPA-1	2.8	0.0305	0.342
HL-06-1	0.03	0.0395	0.00474
HL-90-1	20	0.0702	5.61
HL-90-2	5.6	0.0308	0.691
HL-90-3	0.03	0.0659	0.00791
HL-94-1R	2.8	0.0114	0.128
HL-94-3	2.8	0.0159	0.179
HL-99-1	10	0.0330*	1.32*
HL-99-2	20	0.0480	3.84
HL-99-3	20	0.0605	4.84
I-1	20	0.0232	1.86
Infiltration Gallery	5.6	0.0269	0.602
MPC-1	2.8	0.0218	0.244
MPC-2	2.8	0.0284	0.318
MPC-5	2.8	0.0286	0.320

*This value based on estimated depth to groundwater level.

2.4 SUMMARY OF JUNE 2009 DATA VALIDATION REPORT

All fourteen monitoring wells around the landfill, eight domestic wells, one irrigation well and the infiltration gallery well were included in the June 2008 sampling event. In addition, static water levels (SWL) were obtained from two monitoring wells and one irrigation well. The June 2008 monitoring sites for the City of Helena Landfill include the following:

- Monitoring wells 82-3 (SWL only), HL-06-1, EPA-1, EPA-4 (SWL only), HL-90-1, HL-90-2, HL-90-3, HL-94-1, HL-94-2, HL-94-3, HL-99-1, HL-99-2, HL-99-3, MPC-1, MPC-2, MPC-5;
- Irrigation wells I-1 (SWL only) and I-4;
- Domestic wells 5, 16, 40, 48, 52, 57, 62, 90; and
- The infiltration gallery.

The owner of well 90 could not be reached despite repeated attempts and thus this well could not be sampled during the June 2009 monitoring event. Monitoring well HL-94-2 was vandalized some time between the December 2008 sampling event and this sampling event and could not be sampled due to the sustained damage. The June analytical parameters included metals, volatile organics, semi-volatile organics, halogenated organics, and major anions for all the monitoring wells except MPC-2 and volatile organics, semi-volatile organics, and halogenated organics for all remaining wells as specified in the approved sampling and analysis plan (Hydrometrics, 2008).

The water samples collected for the City of Helena Landfill in June 2009 have been validated by the Hydrometrics Data Validation Department in accordance with the project work plan, "Revised Sampling and Analysis Plan, City of Helena Landfill, Groundwater, Surface Water and Landfill Gas Monitoring Activities" (Hydrometrics, 2008). Lab and field quality control procedures were appropriate; quality control (QC) samples included a field duplicate, a D.I. blank, a trip blank, a rinseate blank, and standard internal laboratory QC samples. No parameters were reported as above the reporting limit in the D.I. blank, trip blank, or rinseate blank. However, the field duplicate pair collected at HL-90-3 exceeded the control limits for chemical oxygen demand when compared with EPA guidance (difference of 2 mg/L between the duplicate pairs as compared with the recommended 1 mg/L for levels less than 5 mg/L). This exceedance resulted in six associated data being flagged. The entire data validation report is included as Appendix A of this report. Overall, the City of Helena Landfill data for June 2009 were deemed acceptable for the purposes of the project as outlined in the work plan.

3. STATISTICAL DATA EVALUATION AND COMPARISON

Four types of data evaluations were conducted using the June 2009 sample results for the for 11 of the 14 monitoring wells around the landfill; monitoring well HL-90-1 was dry and could not be sampled during this event, monitoring well HL-94-2 was vandalized and could not be sampled during this event and cross-gradient well HL-94-3 is evaluated separately. The infiltration gallery, irrigation well, and domestic wells are evaluated separately in Section

4. The four types of data evaluations conducted are:

1. Comparisons of applicable water quality criteria and upgradient (also called “background”) water quality with summary statistics of downgradient concentrations for June 2009 and all samples to date;
2. Inter-well prediction interval analysis;
3. Trend analysis; and
4. Temporal concentration plots.

The first three analyses include all those parameters for which results were reported above the detection limit in any of the seven monitoring wells for the June 2009 sampling event.

The fourth evaluation, temporal concentration plots, was performed for PCE and nitrate, the only constituents that currently exceed their regulatory limits in downgradient wells. Data from all wells which have historically shown PCE results above the detection limit of 0.001 mg/L and nitrate results above the MCL of 10 mg/L or with potentially increasing trends were evaluated.

3.1 DOWNGRAIDENT WATER QUALITY COMPARISONS WITH CRITERIA AND UPGRADIENT WATER QUALITY

The following conclusions are derived from the June 2009 data and summary statistics in Tables 3-1, 3-2, and 3-3:

- (a) For the June 2009 sampling event (Tables 3-1 and 3-2), the following parameters were detected only in background (also called upgradient) wells: arsenic, copper, 1,1,1-trichloroethane, benzene, and total xylenes. Parameters detected in only downgradient wells include: zinc, 1,1-dichloroethane, cis-1,2-dichloroethene, dichlorodifluoromethane, tetrachloroethene (PCE), trichloroethene (TCE), and trichlorofluoromethane.
- (b) Parameters historically detected only in downgradient wells (Table 3-3) include: 1,1-dichloroethane, cis-1,2-dichloroethene, dichlorodifluoromethane, PCE, TCE, and trichlorofluoromethane.
- (c) Nitrate, iron, benzene, cyanide, and PCE were reported at concentrations exceeding MCL criteria in the June 2009 sampling event (Tables 3-1 and 3-2). The MCLs for benzene and cyanide were all exceeded in a single upgradient well (MPC-5); the MCL for PCE was exceeded in two downgradient wells (MPC-1 and HL-99-3); nitrate exceeded its MCL in four downgradient wells (HL-90-3, MPC-1, HL-99-1, and HL-99-3) and one upgradient well (MPC-5); the secondary MCL (based on aesthetic properties rather than human health standards) for iron was exceeded in a single upgradient well (MPC-5).
- (d) Historically in these wells, nitrate, arsenic, cadmium, iron, benzene, PCE, TCE, and cyanide have been reported at concentrations exceeding MCL criteria (Table 3-3). The MCL for cadmium, PCE and TCE have been exceeded in only downgradient wells; nitrate, arsenic and iron have exceeded their MCLs in both upgradient and downgradient wells and the MCLs for benzene and cyanide have been exceeded in only upgradient wells. The June 2009 data is generally consistent with these trends.

**TABLE 3-1. SUMMARY OF PARAMETER CONCENTRATIONS IN LANDFILL MONITORING WELLS
FOR THE JUNE 2009 MONITORING EVENT**

Parameter	Downgradient Wells								Upgradient Wells			Cross-gradient Well	MCL ⁽¹⁾
	HL-90-2	HL-90-3	MPC-1	MPC-2	EPA-1	HL-99-1	HL-99-2	HL-99-3	HL-06-1	MPC-5	HL-94-1	HL-94-3	
pH (s.u.)	7.6	7.5	7.4	NM	7.2	7.3	7.6	7.4	7.1	7.4	7.6	7.8	NA
Specific Conductance (µmhos/cm)	691	1190	1080	NM	1450	1200	863	940	1340	2800	998	961	NA
Sulfate	50	190	200	NM	100	170	120	170	200	890	97	160	NA
Chloride	27	58	57	NM	120	74	41	49	32	29	23	90	NA
Nitrate+Nitrite as N	0.7	11.6	13.1	NM	3.99	11.1	7.8	10.7	5.7	32.8	5.1	14.1	10
Arsenic (Dissolved)	<0.005	<0.005	<0.005	NM	<0.005	<0.005	<0.005	<0.005	<0.005	0.006	<0.005	<0.005	0.010
Cadmium (Dissolved)	<0.001	<0.001	<0.001	NM	0.001	<0.001	0.002	<0.001	0.002	0.001	0.002	<0.001	0.005
Iron (Dissolved)	<0.03	<0.03	<0.03	NM	0.08	<0.03	<0.03	<0.03	<0.03	1.02	<0.03	<0.03	0.3 ⁽²⁾
Nickel (Dissolved)	<0.01	<0.01	<0.01	NM	0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	0.1
Selenium (Dissolved)	<0.005	<0.005	<0.005	NM	<0.005	<0.005	0.006	<0.005	<0.005	0.010	0.007	<0.005	0.05
Zinc (Dissolved)	<0.01	<0.01	<0.01	NM	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	2
1,1,1-Trichloroethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0044	<0.001	<0.001	<0.001	0.2
1,1-Dichloroethane	<0.001	<0.001	0.0023	<0.001	<0.001	<0.001	0.0014	0.0027	<0.001	<0.001	<0.001	<0.001	NA
Benzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0053	<0.001	<0.001	0.005
Chloroform	<0.001	0.0096	0.0020	<0.001	<0.001	0.0028	0.0015	0.0023	<0.001	<0.001	0.0059	0.0073	0.07
Cis-1,2-Dichloroethene	<0.001	<0.001	0.0014	<0.001	<0.001	0.0017	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.07
Dichlorodifluoromethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0013	0.0021	<0.001	<0.001	<0.001	<0.001	1
Total Xylene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0079	<0.001	<0.001	10
Tetrachloroethene (PCE)	<0.001	<0.001	0.012	<0.001	0.0018	0.0037	0.0043	0.0074	<0.001	<0.001	<0.001	<0.001	0.005
Trichloroethene (TCE)	<0.001	<0.001	0.0022	<0.001	<0.001	<0.001	<0.001	0.0014	<0.001	<0.001	<0.001	<0.001	0.005
Trichlorofluoromethane	<0.001	<0.001	0.0011	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	10
Cyanide (Total)	<0.005	<0.005	0.040	NM	<0.005	<0.005	0.058	0.036	<0.005	4.05	<0.005	<0.005	0.2
Chemical Oxygen Demand (COD)	1.0	3.0	2.0	NM	4.0	3.0	<1	<1	<1	36.0	4.0	<1	NA

Concentrations are in mg/L, except as indicated.

NM = not measured

(1) Primary Maximum Contaminant Levels promulgated under the Safe Drinking Water Act for protection of public drinking water supplies.

NA indicates no MCL has been promulgated.

(2) Secondary Maximum Contaminant Level based on aesthetic properties such as taste, odor, and staining.

**TABLE 3-2. COMPARISON OF DOWNGRADIENT CONCENTRATIONS WITH BACKGROUND CONCENTRATIONS
AND MCLs FOR THE JUNE 2009 SAMPLING EVENT**

Parameter	December 2008 Downgradient Well Concentrations (mg/L) (1)						Comparison Values (mg/L)				
	D.F. (3)	Min.	Mean (4)	Median	Max.	Max. Location	Background / Upgradient Wells (2)				MCL (5)
							D.F. (3)	Mean (4)	Median	Max.	
pH (s.u.)	7/7	7.2	7.43	7.4	7.6	HL-99-2	3/3	7.37	7.4	7.6	NA
Specific Conductance (µmhos/cm)	7/7	691	1059	1080	1450	EPA-1	3/3	1713	1340	2800	NA
Sulfate	7/7	50	143	170	200	MPC-1	3/3	396	200	890	NA
Chloride	7/7	27	<u>61</u>	<u>57</u>	<u>120</u>	EPA-1	3/3	28	29	32	NA
Nitrate+Nitrite as N	7/7	0.7	8.4	10.7	13.1	MPC-1	3/3	14.5	5.7	32.8	10
Arsenic (Dissolved)	0/7	<0.005	<0.005	<0.005	<0.005	-	1/3	0.0053	<0.005	0.006	0.010
Cadmium (Dissolved)	2/7	<0.001	0.0011	<0.001	0.002	HL-99-2	3/3	0.002	0.002	0.002	0.005
Iron (Dissolved)	1/7	<0.03	0.037	<0.03	0.08	EPA-1	1/3	0.36	<0.03	1.02	0.3 ⁽²⁾
Nickel (Dissolved)	1/7	<0.01	0.010	<0.01	0.01	EPA-1	1/3	0.01	<0.01	0.01	0.1
Selenium (Dissolved)	1/7	<0.005	0.005	<0.005	0.006	HL-99-2	2/3	0.0073	0.007	0.01	0.05
Zinc (Dissolved)	1/7	<0.01	<u>0.010</u>	<0.01	<u>0.010</u>	HL-99-1	0/3	<0.01	<0.01	<0.01	2
1,1,1-Trichloroethane	0/8	<0.001	<0.001	<0.001	<0.001	-	1/3	0.0021	<0.001	0.0044	0.2
1,1-Dichloroethane	3/8	<0.001	<u>0.0014</u>	<0.001	<u>0.0027</u>	HL-99-3	0/3	<0.001	<0.001	<0.001	NA
Benzene	0/8	<0.001	<0.001	<0.001	<0.001	-	1/3	0.0024	<0.001	0.0053	0.005
Chloroform	5/8	<0.001	0.0027	0.00175	<u>0.0096</u>	HL-90-3	1/3	0.0026	<0.001	0.0059	0.07
Cis-1,2-Dichloroethene	2/8	<0.001	<u>0.0011</u>	<0.001	<u>0.0017</u>	HL-99-1	0/3	<0.001	<0.001	<0.001	0.07
Dichlorodifluoromethane	2/8	<0.001	<u>0.0012</u>	<0.001	<u>0.0021</u>	HL-99-3	0/3	<0.001	<0.001	<0.001	1
Total Xylene	0/8	<0.001	<0.001	<0.001	<0.001	-	1/3	0.0033	<0.001	0.0079	10
Tetrachloroethene (PCE)	5/8	<0.001	<u>0.0040</u>	<u>0.00275</u>	0.012	MPC-1	0/3	<0.001	<0.001	<0.001	0.005
Trichloroethene (TCE)	2/8	<0.001	<u>0.0012</u>	<0.001	<u>0.0022</u>	MPC-1	0/3	<0.001	<0.001	<0.001	0.005
Trichlorofluoromethane	1/8	<0.001	<u>0.0010</u>	<0.001	<u>0.0011</u>	MPC-1	0/3	<0.001	<0.001	<0.001	10
Cyanide (Total)	3/7	<0.005	0.022	<0.005	0.058	HL-99-2	1/3	1.35	<0.005	4.05	0.2
Chemical Oxygen Demand (COD)	5/7	<1	2.14	2	4	EPA-1	2/3	13.7	4	36	NA

(1) Downgradient wells are: HL-90-1, HL-90-2, HL-90-3, MPC-1, MPC-2, EPA-1, HL-99-1, HL-99-2, HL-99-3.

(2) Background / Upgradient wells are: HL-06-1, MPC-5, HL-94-1, HL-94-2.

(3) Detection frequency (D.F.), i.e. the number of detections over the total number of samples analyzed for that parameter.

(4) Means calculated using the detection limit for non-detected sample results.

(5) Primary Maximum Contaminant Levels promulgated under the Safe Drinking Water Act for protection of public drinking water supplies.

NA indicates no MCL has been promulgated.

(6) Secondary Maximum Contaminant Level based on aesthetic properties such as taste, odor, and staining.

(7) MCL is for Total Xylenes

Values in **bold** exceed the MCL. Underlined values exceed the maximum background/upgradient concentration.

**TABLE 3-3. COMPARISON OF DOWNGRADIENT CONCENTRATIONS WITH BACKGROUND CONCENTRATIONS
AND MCLs FOR ALL SAMPLING EVENTS TO DATE**

Parameter	Period of Record Downgradient Well Concentrations (mg/L) ⁽¹⁾						Comparison Values (mg/L)				
	D.F. ⁽³⁾	Min.	Mean ⁽⁴⁾	Median	Max.	Max. Location	Background / Upgradient Wells ⁽²⁾				MCL ⁽⁵⁾
							D.F. ⁽³⁾	Mean ⁽⁴⁾	Median	Max.	
pH (s.u.)	226/226	6.8	7.41	7.4	8.1	HL-90-2	112/112	7.46	7.5	7.9	NA
Specific Conductance (µmhos/cm)	216/216	632	1066	1000	2550	EPA-1	108/108	1369	998	4170	NA
Sulfate	226/226	15	138	131	345	EPA-1	112/112	279	96	1980	NA
Chloride	226/226	2	54	41	262	EPA-1	111/112	47	27	250	NA
Nitrate+Nitrite as N	203/205	<0.05	7.35	7.67	16.9	EPA-1	107/107	11.49	7.05	73	10
Arsenic (Dissolved)	4/226	<0.005	0.0053	<0.005	0.028	MPC-2	46/115	0.0069	<0.005	0.1	0.010
Cadmium (Dissolved)	12/229	<0.001	0.0011	<0.001	0.006	HL-90-3	5/115	0.0010	<0.001	0.002	0.005
Iron (Dissolved)	50/226	<0.03	0.082	<0.03	1.69	MPC-1	40/112	0.301	<0.03	3.14	0.3 ⁽⁶⁾
Nickel (Dissolved)	25/206	<0.01	0.011	<0.01	0.06	EPA-1	19/110	0.011	<0.01	0.05	0.1
Selenium (Dissolved)	5/226	<0.005	0.0050	<0.005	0.006	HL-90-3	34/115	0.0057	<0.005	0.027	0.05
Zinc (Dissolved)	30/209	<0.01	0.014	<0.01	0.15	HL-90-2	14/110	0.0111	<0.01	0.1	2
1,1,1-Trichloroethane	57/347	<0.001	0.0012	<0.001	<u>0.0074</u>	HL-90-1	10/119	0.0012	<0.001	0.0057	0.2
1,1-Dichloroethane	210/347	<0.001	<u>0.0020</u>	<u>0.0014</u>	<u>0.0073</u>	MPC-1	0/119	<0.001	<0.001	<0.001	NA
Benzene	2/347	<0.001	0.0010	<0.001	0.0029	HL-90-2	24/119	0.0050	<0.001	0.077	0.005
Chloroform	248/347	<0.001	0.0025	0.0021	0.016	EPA-1	94/119	0.0050	0.0027	0.037	0.07
Cis-1,2-Dichloroethene	89/324	<0.001	<u>0.0012</u>	<0.001	<u>0.011</u>	EPA-1	0/114	<0.001	<0.001	<0.001	0.07
Dichlorodifluoromethane	150/347	<0.001	<u>0.0017</u>	<0.001	<u>0.016</u>	EPA-1	0/119	<0.001	<0.001	<0.001	1
Total Xylene	1/116	<0.001	0.0010	<0.001	0.002	MPC-2	8/39	0.0055	<0.001	0.053	10
Tetrachloroethene (PCE)	248/347	<0.001	0.0069	<u>0.0045</u>	0.094	EPA-1	0/119	<0.001	<0.001	<0.001	0.005
Trichloroethene (TCE)	145/347	<0.001	<u>0.0013</u>	<0.001	0.0074	EPA-1	0/119	<0.001	<0.001	<0.001	0.005
Trichlorofluoromethane	63/347	<0.001	<u>0.0012</u>	<0.001	<u>0.0083</u>	EPA-1	0/119	<0.001	<0.001	<0.001	10
Cyanide (Total)	70/233	<0.005	0.013	<0.005	0.151	MPC-1	25/119	0.962	<0.005	10.9	0.2
Chemical Oxygen Demand (COD)	150/224	<1	4.4	3	26	EPA-1	91/113	12.9	8	75	NA

(1) Downgradient wells are: HL-90-1, HL-90-2, HL-90-3, MPC-1, MPC-2, EPA-1, HL-99-1, HL-99-2, HL-99-3.

(2) Background / Upgradient wells are: 83-6, HL-06-1, MPC-5, HL-94-1, HL-94-2.

(3) Detection frequency (D.F.), i.e. the number of detections over the total number of samples analyzed for that parameter.

(4) Means calculated using the detection limit for non-detected sample results.

(5) Primary Maximum Contaminant Levels promulgated under the Safe Drinking Water Act for protection of public drinking water supplies.

NA indicates no MCL has been promulgated.

(6) Secondary Maximum Contaminant Level based on aesthetic properties such as taste, odor, and staining.

Values in **bold** exceed the MCL. Underlined values exceed the maximum background/upgradient concentration.

- (g) Nitrate was detected in all of the June 2009 samples. The MCL of 10.0 mg/L was exceeded in one sample collected in upgradient well (MPC-5) and in four samples collected from downgradient wells (HL-90-3, MPC-1, HL-99-1 and HL-99-3). Monitoring well MPC-5 showed an increasing trend from 1998 through 2005 reaching a maximum of 73.0 mg/L. Since then, there has been some decrease in the nitrate concentration in this well and is currently at a level of 32.8 mg/L. Discussions with MPC representatives revealed that an attempt to remediate cyanide (from a historic coal gasification plant that was operated just east of the landfill) through oxidation may have inadvertently increased nitrate concentration in area groundwater. This pilot program was shut down when these adverse affects became apparent. However, nitrate levels in downgradient wells have slowly been increasing.
- (i) Metals and arsenic concentrations in groundwater samples have historically been low (typically below laboratory detection limits). Arsenic was detected only in upgradient well MPC-5; cadmium was detected in all three upgradient wells and in two downgradient wells (EPA-1 and HL-99-2); iron and nickel were detected in downgradient well EPA-1 and upgradient well MPC-5; selenium was detected in upgradient wells MPC-5 and HL-94-1 and in downgradient well HL-99-2; and zinc was detected only in downgradient well HL-99-1 during June 2009 monitoring (Table 3-1). The detected arsenic and metal concentrations were all at or near their detection limits except for iron in upgradient well MPC-5 (1.02 mg/L) compared to a detection limit of 0.03 mg/L. Iron exceeded the secondary MCL of 0.3 mg/L (based on aesthetic properties such as taste, odor and staining rather than human health standards) in this well. Iron has historically fluctuated at MPC-5 with concentrations ranging from approximately 0.2 mg/L to 4 mg/L (based on data collected from December 1995 through June 2009).
- (j) During the June 2009 sampling event, several volatile organic compounds (VOCs) were detected in samples from downgradient wells, but not in samples from background wells (1,1-dichloroethane, cis-1,2-dichloroethene, dichlorodifluoromethane, PCE, TCE, and trichlorofluoromethane). PCE was the only VOC to exceed its MCL in downgradient wells (MPC-1 and HL-99-3). 1,1,1-Trichloroethane,

benzene, and total xylenes were detected only in background wells; benzene was the only VOC to exceed its MCL in upgradient wells. Chloroform was the only VOC detected in samples from both downgradient and background wells. All detections of chloroform were well below the MCL of 0.07 mg/L.

- (h) Cyanide was detected in three downgradient wells (MPC-1, HL-99-2, and HL-99-3) and one upgradient well (MPC-5) during the June 2009 sampling event. All the downgradient detections were well below the MCL of 0.2 mg/L, but upgradient well MPC-5 (4.05 mg/L) exceeded the MCL. Previous sampling events have shown that cyanide is present at concentrations ranging from approximately 0.77 to 11 mg/L (based on data collected from June 1995 through June 2009) in upgradient well MPC-5. Historically, downgradient detections of cyanide have been well below the MCL indicating that elevated cyanide levels are not attributable to the Helena Landfill (Table 3-3). As noted previously, a coal gasification plant was historically operated east of the landfill site and could be a source of residual cyanide in groundwater upgradient of the landfill.

3.2 INTER-WELL PREDICTION INTERVAL ANALYSIS

An inter-well prediction interval analysis was used to test for statistically significant differences between background and compliance well concentrations for selected parameters (those above the detection limit in any of the twelve monitoring wells for the June 2009 sampling event). Combining all historical data for the background wells, the Shapiro-Francia Test of Normality was performed for each parameter to determine the distribution of the background data. Inter-well parametric prediction intervals were used when the background data were normally or ln-normally distributed. In cases where the background data were not normally or ln-normally distributed, a non-parametric prediction limit was used. All non-detect values were evaluated at one half the detection limit. Results of the prediction interval test are summarized in Table 3-4. Documentation for each of these statistical tests used is included in Appendix B of this report.

TABLE 3-4. RESULTS OF INTER-WELL PREDICTION INTERVAL TESTS

Parameter	Background Wells		Downgradient Wells							
	Distribution ⁽¹⁾	Prediction Limit ⁽²⁾	HL-90-2	HL-90-3	MPC-1	MPC-2	EPA-1	HL-99-1	HL-99-2	HL-99-3
pH (s.u.)	Non-Norm	6.9-7.9	7.6	7.5	7.4	NM	7.2	7.3	7.6	7.4
Specific Conductance (µmhos/cm)	Non-Norm	4083	691	1190	1080	NM	1450	1200	863	940
Sulfate	Non-Norm	1819	50	190	200	NM	100	170	120	170
Chloride	Non-Norm	193	27	58	57	NM	120	74	41	49
Nitrate+Nitrite as N	Non-Norm	71	0.7	11.6	13.1	NM	3.99	11.1	7.8	10.7
Arsenic (Dissolved)	Non-Norm	0.034	<0.005	<0.005	<0.005	NM	<0.005	<0.005	<0.005	<0.005
Cadmium (Dissolved)	Non-Norm	0.0019	<0.001	<0.001	<0.001	NM	0.001	<0.001	0.002	<0.001
Iron (Dissolved)	Non-Norm	2.93	<0.03	<0.03	<0.03	NM	0.08	<0.03	<0.03	<0.03
Nickel (Dissolved)	Non-Norm	0.029	<0.01	<0.01	<0.01	NM	0.01	<0.01	<0.01	<0.01
Selenium (Dissolved)	Non-Norm	0.010	<0.005	<0.005	<0.005	NM	<0.005	<0.005	0.006	<0.005
Zinc (Dissolved)	Non-Norm	0.020	<0.01	<0.01	<0.01	NM	<0.01	0.010	<0.01	<0.01
1,1,1-Trichloroethane	Non-Norm	0.0044	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,1-Dichloroethane	ND	0.001	<0.001	<0.001	0.0023	<0.001	<0.001	<0.001	0.0014	0.0027
Benzene	Non-Norm	0.064	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chloroform	Non-Norm	0.036	<0.001	0.0096	0.0020	<0.001	<0.001	0.0028	0.0015	0.0023
Cis-1,2-Dichloroethene	ND	0.001	<0.001	<0.001	0.0014	<0.001	<0.001	0.0017	<0.001	<0.001
Dichlorodifluoromethane	ND	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0013	0.0021
Total Xylene	Non-Norm	0.050	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Tetrachloroethene (PCE)	ND	0.001	<0.001	<0.001	0.012	<0.001	0.0018	0.0037	0.0043	0.0074
Trichloroethene (TCE)	ND	0.001	<0.001	<0.001	0.0022	<0.001	<0.001	<0.001	<0.001	0.0014
Trichlorofluoromethane	ND	0.001	<0.001	<0.001	0.0011	<0.001	<0.001	<0.001	<0.001	<0.001
Cyanide (Total)	Non-Norm	10.5	<0.005	<0.005	0.040	NM	<0.005	<0.005	0.058	0.036
Chemical Oxygen Demand (COD)	Non-Norm	65.4	1.0	3.0	2.0	NM	4.0	3.0	<1	<1

(1) Normality was calculated using the Shapiro-Francia test.

Norm (X%) = data normally distributed at X% level of significance.

ln-Norm (X%) = data ln-normally distributed at X% level of significance.

Non-Norm = data not normally or ln-normally distributed at 95% or 99% level of significance.

ND = all background data below detection limits. Value shown is the detection limit.

(2) Prediction limits calculated as follows:

Normal or ln-normal distribution: parametric prediction interval (99% one-sided, two-sided for pH)

Non-normal distribution: non-parametric prediction interval (99% one-sided, two-sided for pH)

ND: any detectable concentrations in compliance wells are considered significant.

Bold values indicate statistically significant results.

NA - not analyzed

As shown on Table 3-4, cadmium, 1,1-dichloroethane, cis-1,2-dichloroethane, dichlorodifluoromethane, tetrachloroethene, trichloroethene, and trichlorofluoromethane have statistically greater concentrations in downgradient wells than upgradient wells.

3.3 TREND ANALYSIS

In addition to evaluating the chemical concentrations in upgradient and downgradient wells around the landfill for the June 2009 sampling event, it is also important to evaluate concentration trends of key constituents over time. Using the Mann-Kendall test, statistical testing for trends was performed for each downgradient exceedance of its respective inter-well prediction interval as discussed in Section 3.2. All non-detect values were evaluated as zero to prevent the detection of false trends when parameters are detected at concentrations less than the reporting limit or when the reporting limits have changed over time. The results of these analyses are summarized in Table 3-5. Documentation for these statistical tests is included in Appendix B of this report. Cis-1,2-Dichloroethane is showing increasing trends in MPC-1; according to National Primary Drinking Water Regulations, cis-1,2-dichloroethane is formed as a breakdown product from the reductive dehalogenation of the common industrial solvents TCE and PCE. Dichlorodifluoromethane and PCE are showing decreasing trends in downgradient wells. 1,1-Dichloroethane is showing increasing and decreasing trends in downgradient wells; this compound is a breakdown product of 1,1,1-trichloroethane, historically found primarily in wells upgradient of the Helena landfill.

TABLE 3-5. RESULTS OF MANN-KENDALL TREND ANALYSES

Parameter	MPC-1	EPA-1	HL-99-1	HL-99-2	HL-99-3
Cadmium				No Trend	
1,1-Dichloroethane	Decreasing			Increasing	No Trend
Cis-1,2-Dichloroethane	Increasing		No Trend		
Dichlorodifluoromethane				No Trend	Decreasing
Tetrachloroethene (PCE)	No Trend	Decreasing	Decreasing	No Trend	Decreasing
Trichloroethene (TCE)	No Trend				No Trend
Trichlorofluoromethane	No Trend				

* Grayed boxes did not have downgradient exceedances of the respective inter-well prediction interval and therefore a trend analysis was not performed.

3.4 TEMPORAL CONCENTRATION PLOTS

This report focuses on concentration trends for PCE and nitrate because they are the only constituents currently exceeding their MCLs in downgradient monitoring wells. PCE was also the focus of the Corrective Measures Assessment for the landfill (Hydrometrics, 1995).

In an attempt to reduce concentrations of PCE in compliance well HL-90-1, the City installed a groundwater extraction system in the spring of 2000. This treatment system involves pumping wells HL-99-1, HL-99-2 and HL-99-3 to intercept PCE leaving the landfill, and treating the water to remove VOCs prior to land application on Bill Roberts Golf Course. These wells have been included in groundwater monitoring events along with compliance well HL-90-1 to evaluate the progress of this new groundwater extraction system.

Trends in PCE concentrations over time from 1999 through June 2009 for selected monitoring wells are shown on Figure 3-1. PCE concentrations exceeded the MCL value of 0.005 mg/L in monitoring wells MPC-1 and HL-99-3 for June 2009.

Historically, the concentration of PCE in well MPC-1 (now 0.012 mg/L) has fluctuated between 0.0032 mg/L and 0.017 mg/L based on data collected between May 1992 and June 2009 and showing some increasing and some decreasing trends. The PCE concentrations in pumping wells HL-99-1, HL-99-2 and HL-99-3 have shown seasonal fluctuations and decreasing trends in HL-99-1 and HL-99-3 since their installation in 1999. Well HL-99-3 fluctuates mostly just above the MCL. Well HL-99-2 fluctuates above and below the MCL seasonally and was below the MCL for the June 2009 sampling. Well HL-99-1 has remained below the MCL for almost six years. Concentrations in well EPA-1 have decreased significantly since monitoring began (>90 ppb) and have been below the MCL for more than nine years. Compliance well HL-90-1 has shown definite improvement since the installation of the groundwater extraction system in June 2000, averaging 0.0146 mg/L before the extraction system and 0.0077 mg/L after.

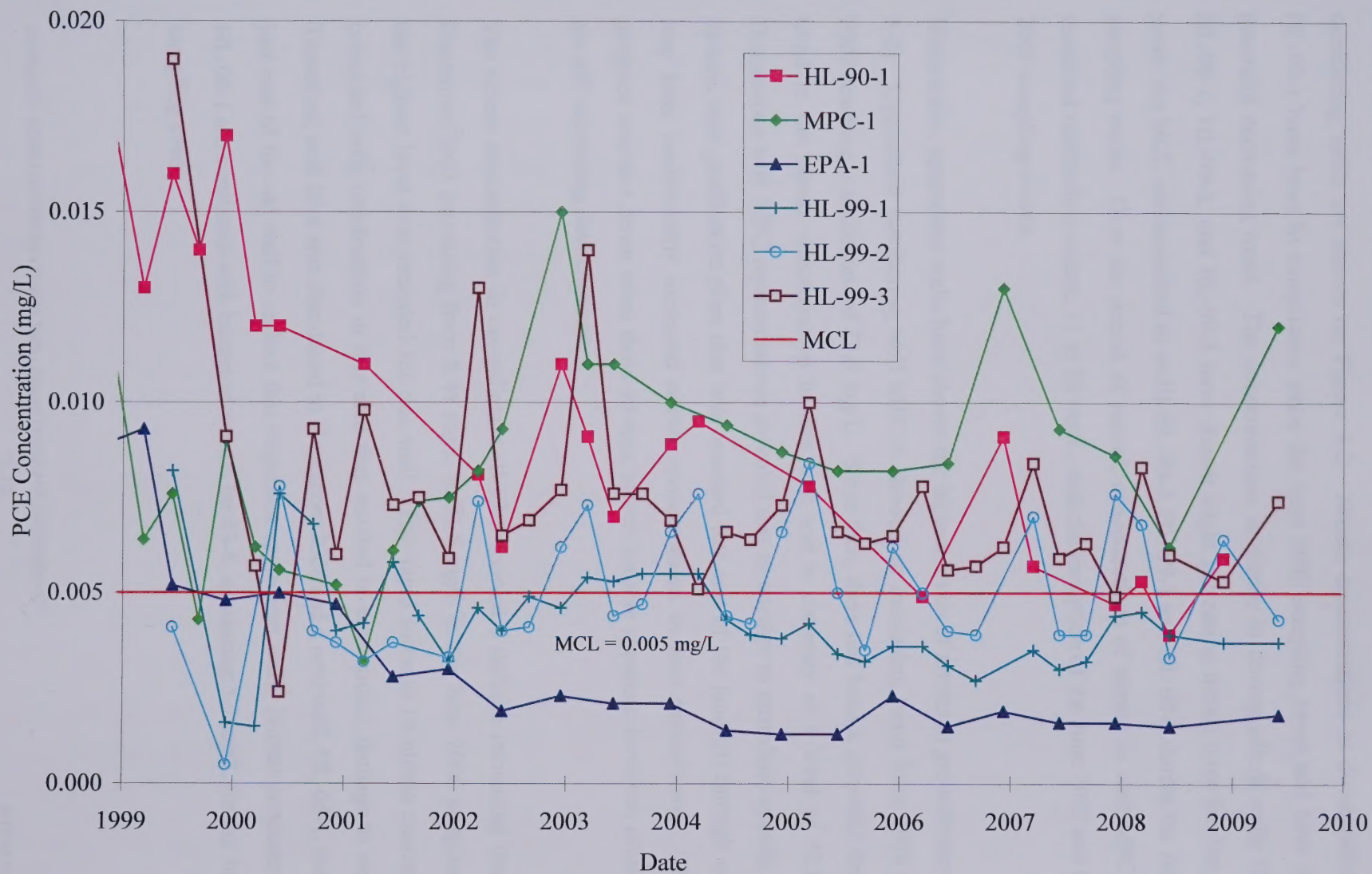


Figure 3-1. Temporal Trends in Tetrachloroethene Concentrations at Selected Downgradient Wells

Trends in nitrate concentrations over time from 1999 through June 2009 for selected monitoring wells are shown on Figure 3-2. Nitrate concentrations at downgradient well HL-90-1 have been in compliance since the June 2002 sampling event and have shown a generally decreasing trend. The concentrations in nitrate in downgradient wells HL-90-3, HL-99-1, HL-99-2, and HL-99-3 have shown slight increasing trends over the last several years; the MCL was exceeded in wells HL-90-3, HL-99-1 and HL-99-3 during the June 2009 sampling event. Over the period of record, concentrations of nitrate in well MPC-1 have remained relatively constant, 11 to 13 mg/L, with the exception of the June 2002 and the June 2009 sampling events.

Historically, upgradient wells have shown the highest levels of nitrate in groundwater (Figure 3-2). Upgradient monitoring well MPC-5 showed an increasing trend from 1998 through 2005 reaching a maximum of 73.0 mg/L. Since then, there has been a generally decreasing trend in the nitrate concentration in this well and is currently at a level of 32.8 mg/L. Discussions with MPC representatives revealed that an attempt to remediate cyanide (from a historic coal gasification plant that was operated just east of the landfill) through oxidation may have inadvertently increased nitrate concentrations in area groundwater. This pilot program was shut down when these adverse affects became apparent; however, nitrate levels are still increasing downgradient.

The nitrate concentration in upgradient well 83-6 showed a definite increasing trend since December 2003 increasing from 8.44 mg/L to 71.6 mg/L in the June 2006 sampling event, the highest level ever recorded for this well. This rapid increase in nitrate concentrations coincided with construction in this area that resulted in some minor damage to well 83-6. Therefore, well 83-6 was abandoned in November 2006 and a new well, HL-06-1, was drilled just east of the old well to replace this important upgradient well. Nitrate concentrations in HL-06-1 are consistent with historical results for 83-6, measuring 5.7 mg/L for the June 2009 sampling event.



Figure 3-2. Temporal Trends in Nitrate Concentrations at Selected Wells

In addition to landfill leachate, other potential sources of nitrate in groundwater include historic coal gasification activities east of the landfill (see Section 3.1) and cyanide remediation activities for this site, as well as infiltration of surface runoff containing soluble nitrate fertilizers. Due to the presence of elevated concentrations in both upgradient and downgradient monitoring wells, the effects of the landfill on groundwater nitrate concentrations (relative to other potential sources) are unclear. Trends in nitrate concentrations will continue to be evaluated in future monitoring reports.

3.5 CROSS-GRADIENT DATA EVALUATION

Although statistical analyses were not performed using cross-gradient well HL-94-3, a general comparison can be made between the data for HL-94-3 and the data collected for both upgradient and downgradient wells. For the June 2009 sampling event, nitrate and chloroform were the only constituents besides the major anions that were measured at or above their respective detection limits (Table 3-1). The concentration of nitrate exceeded the MCL.

The pH for well HL-94-3 exceeded the ranges of both upgradient and downgradient wells (Table 3-2). The specific conductance for HL-94-3 (961 umhos/cm) was closer to the average downgradient measurement (1059 umhos/cm) than the average upgradient measurement (1713 umhos/cm). The nitrate concentration at well HL-94-3 of 14.1 mg/L was closer to the average concentration for upgradient wells than downgradient wells reported at 14.5 mg/L and 8.4 mg/L, respectively. Chloroform was reported at a concentration of 0.0073 mg/L, exceeding the maximum concentration for upgradient wells (0.0059 mg/L) but within the range for downgradient wells (<0.001 mg/L to 0.0096 mg/L).

4. IRRIGATION WELL AND DOMESTIC WELL DATA EVALUATION

One irrigation well, the infiltration gallery and seven domestic wells were also sampled during the June 2009 sampling event. The infiltration gallery and well 62 had no VOCs reported above the detection limits. For wells 5, 16, 40, 48, 52 and 57, the only concentrations of VOCs reported above the detection limit were for chloroform and tetrachloroethene; all detections were below their respective MCLs. Irrigation well I-4 had measurable concentration of 1,1-dichloroethane, chloroform, cis-1,2-dichloroethene, dichlorodifluoromethane, PCE and TCE. Only the concentration of PCE (0.0089 mg/L) exceeded its MCL (0.005 mg/L). Historically, PCE has ranged between 0.0042 mg/L and 0.011 mg/L. The concentrations for all parameters for both wells were similar to concentrations measured in these wells during the December 2008 sampling event. All of these wells are used only for irrigation and all homeowners of these domestic wells have been connected to the City water supply.

5. SUMMARY AND CONCLUSIONS

This statistical evaluation of the June 2009 sample results indicated that cadmium, 1,1-dichloroethene, cis-1,2-dichloroethene, dichlorodifluoromethane, PCE, TCE, and trichlorofluoromethane were detected in downgradient wells at levels statistically greater than upgradient wells. PCE and nitrate were the only groundwater constituents that exceeded the primary MCL (federal drinking water standard) in one or more downgradient wells. The MCLs for nitrate, benzene, and cyanide and the secondary MCL for iron were exceeded in upgradient well MPC-5.

Nitrate exceeded the MCL of 10.0 mg/L in one sample collected in upgradient well (MPC-5) and in four samples collected from downgradient wells (HL-90-3, MPC-1, HL-99-1 and HL-99-3). Historically, concentrations of nitrate in upgradient wells have far exceeded concentrations in downgradient wells. Due to the presence of elevated concentrations in both upgradient and downgradient monitoring wells, the effects of the landfill on groundwater nitrate concentrations (relative to other potential sources such as the historic industrial area east of the landfill and commonly used nitrate fertilizers) are unclear. Monitoring of groundwater nitrate concentrations will continue in future semiannual monitoring events, allowing further evaluation of upgradient and downgradient concentration trends.

PCE exceeded the federal MCL in downgradient wells MPC-1 and HL-99-3. To address the elevated PCE concentrations in compliance well HL-90-1, a groundwater extraction system was installed and began operation in June 2000. Groundwater is being pumped from three wells (HL-99-1, HL-99-2 and HL-99-3) located to intercept PCE leaving the landfill, and treated to remove VOCs prior to land application. These wells are included in the semiannual groundwater monitoring events to evaluate the progress of the new system. Concentrations of PCE in well EPA-1 and extraction wells HL-99-1 and HL-99-3 show a statistically decreasing trend.

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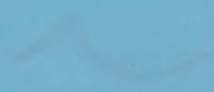
DATA VALIDATION REPORT
GROUNDWATER QUALITY DATA
SEMI-ANNUAL SAMPLING
JUNE 2009

CITY OF HELENA LANDFILL

Prepared for:
CITY OF HELENA
HELENA, MONTANA

APPENDIX A

DATA VALIDATION REPORT

 **Hydrometrics, Inc.**
collecting, analyzing and reporting

JULY 2009

**DATA VALIDATION REPORT
GROUNDWATER QUALITY DATA
SEMI-ANNUAL SAMPLING
JUNE 2009**

CITY OF HELENA LANDFILL

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HELENA, MONTANA



Hydrometrics, Inc.
consulting scientists and engineers

JULY 2009

DATA VALIDATION REPORT

CITY OF HELENA LANDFILL

Groundwater Samples Collected in

June 2009

(Semi-Annual Sampling)

Prepared by
Hydrometrics, Inc.
3020 Bozeman Avenue
Helena, MT 59601

July 2009

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GLOSSARY OF TERMS

CCB.....	Continuing Calibration Blank
CCV	Continuing Calibration Verification
CLP	Contract Laboratory Program
CRDL.....	Contract Required Detection Limit
FAA	Flame Atomic Absorption
GFAA.....	Graphite Furnace Atomic Absorption
HGAA.....	Hydride Generation Atomic Absorption
ICB.....	Initial Calibration Blank
ICP	Inductively Coupled Plasma
ICV.....	Initial Calibration Verification
IDL.....	Instrument Detection Limit
LCS	Laboratory Control Sample
MSA.....	Method of Standard Additions
PB.....	Preparation Blank
PRDL	Project Required Detection Limit
QAPP	Quality Assurance Project Plan
QC.....	Quality Control
RPD.....	Relative Percent Difference
RSD.....	Relative Standard Deviation
SOW.....	Statement of Work
TDS.....	Total Dissolved Solids

SUMMARY

Laboratory analysis for groundwater samples collected for the June 2009 sampling event as part of the City of Helena Landfill have been reviewed and validated. This review has been in accordance with the "Revised Sampling and Analysis Plan; City of Helena Landfill; Groundwater, Surface Water, and Landfill Gas Monitoring Activities" (Hydrometrics, March 2008). All samples were analyzed at Energy Laboratories in Helena, Montana.

Data results are qualified when associated field quality control samples have not met validation criteria. Not all quality control deficiencies are equally serious and some may not have any practical impact on the usefulness of the data. A summary of quality control violations found in this validation follows:

Violations involving field quality control samples:

- In the field duplicate pair, HL-0906-114 and HL-0906-115 (HL-90-3), one exceedance occurred for chemical oxygen demand resulting in six associated data being flagged.

Violations involving laboratory quality control samples:

- In the QA/QC Summary Report provided by Energy Laboratories, matrix spike and matrix spike duplicate review showed several exceedances. However, at this level of validation, laboratory exceedances are noted but no flagging of the data occurs.
- It should also be noted that Energy Laboratories raised the reporting limit of nitrate + nitrite as n and cyanide due to sample matrix interference. The reporting limits used for dissolved antimony and thallium were lower than the requested limits, and did not seem to impact the results.
- Energy Laboratories exceeded the holding time for pH for all samples submitted. However, as a rule holding times for laboratory pH measurements are frequently exceeded because measurements are typically not conducted "immediately", but rather as soon as practicable. Therefore, no qualifiers are applied for lab pH holding time exceedances.
- It should be noted that Energy Laboratories used a different method than stated in the work plan on the following parameters: pH, SC, cyanide, antimony, cadmium, lead, and

thallium. However, no associated data was flagged because the methods used are considered comparable to stated methods in work plan.

Deviations from the prescribed quality control procedures and/or exceedances of quality control limits have been noted, and results have been flagged in the database. The data quality objectives for accuracy and precision were met, as 99 percent of the field quality control sample results were within control limits and 97 percent of the laboratory quality control samples were within limits. The frequency requirements of 10 percent submittal of blanks, duplicates, control standards and spikes were met. The recommended project completeness goal, acceptance of 90 percent of the results as valid, has also been met as no results have been rejected as a result of this data review. Further discussion of data quality objectives is in Section 12 of the data validation report. All tables are in Appendix 1: data validation codes and definitions are listed in Table 1; a brief summary of flagged data is in Table 2; and a historical comparison is in Table 3. A database printout of this sampling event is located in Appendix 2. The Hydrometrics field notes are in Appendix 3. Energy Laboratories Analytical Reports are located in Appendix 4.

DATA VALIDATION REPORT

1. INTRODUCTION

This validation applies to organic analytes for 32 water samples collected for the City of Helena Landfill semi-annual monitoring project during the June 2009 sampling event. The total number of samples included: seven field observations, one field duplicate, two field blanks (DI and Rinsate) and one trip blank.

All samples were submitted for volatile organic analyses, and select samples were submitted for inorganic analyses (metals and wet chemistry) as follows:

SITE CODE	SAMPLE NUMBER	WATER LEVEL	FIELD PARAMETERS ¹	METALS AND COMMONS ²	VOLATILES METHOD 8260 ³
INF GALLERY	HL-0906-100	X	X		X
MPC-2	HL-0906-101		X		X
Res #16	HL-0906-102		X		X
Res #5	HL-0906-103		X		X
Res #40	HL-0906-104		X		X
Res # 57	HL-0906-105		X		X
Res #52	HL-0906-106		X		X
Res #48	HL-0906-107		X		X
I-4	HL-0906-108	X			X
Res #62	HL-0906-109		X		X
HL-90-2	HL-0906-110	X	X	X	X
HL-94-1	HL-0906-111	X	X	X	X
HL-94-2	HL-0906-112	NO ACCESS DUE TO VANDALISM			
HL-06-1	HL-0906-113	X	X	X	X
HL-90-3	HL-0906-114	X	X	X	X
HL-90-3 DUP	HL-0906-115		X	X	X
HL-94-3	HL-0906-116	X	X	X	X
HL-90-1	HL-0906-117	X			
MPC-1	HL-0906-118	X	X	X	X
DI BLANK	HL-0906-119		X	X	X
EPA-1	HL-0906-120	X	X	X	X
MPC-5	HL-0906-121	X	X	X	X
HL-99-1	HL-0906-122	X	X	X	X
HL-99-2	HL-0906-123	X	X	X	X
HL-99-3	HL-0906-124	X	X	X	X
RINSATE BLANK	HL-0906-125		X	X	X
TRIP BLANK	HL-0906-126				X
I-1	HL-0906-127	X			
82-3	HL-0906-128	X			
EPA-2	HL-0906-129	NO ACCESS DUE TO CONSTRUCTION			
EPA-4	HL-0906-130	X			
83-7	HL-0906-131	DRY			

- 1.) Field parameters include pH, SC, and water temperature.
- 2.) Metals and commons include those compounds listed in the first half of ARM 17.50.708 Table 1.
- 3.) Volatile organic compounds include those listed in the second half of ARM 17.50.708 Table 1.

- Validation procedures used are generally consistent with:
(Check all that apply)
☒ EPA CLP National Functional Guidelines for Inorganics Data Review
☒ EPA CLP National Functional Guidelines for Organic Data Review
☒ Work Plan (Sampling and Analysis Plan, City of Helena Landfill
Groundwater Monitoring Activities, Hydrometrics, March 2008)
- Overall level of validation:
☐ Contract Laboratory Program (CLP)
☒ Standard (see following notes)
☐ Visual

NOTES: The review of this data includes checking all field and laboratory quality control samples; flagging for exceedances in field quality control; and calculating precision, accuracy, and completeness for both laboratory and field quality control samples.

2. DELIVERABLES

- All laboratory document deliverables were present as specified in the CLP-Statement of Work (CLP-SOW), EPA, 1993 and/or the project contract.
☒ Yes
☐ No
- All documentation of field procedures was provided as required.
☒ Yes (see following notes)
☐ No

NOTES: Sample HL-0906-113 was preserved in the field for nutrients but did not meet the <2.0 requirement of the laboratory when received. The laboratory took corrective action when the sample was received by adding the sulfuric acid and noting on the laboratory receipt checklist. In the field book the sample notes indicated that the water was still very brown and turbulent even after purging 15 gallons of water to develop the well.

- Consistency with project requirements
Sampling was completed in order as stated in the SAP.
☒ Yes (see following notes)
☐ No

NOTES: It should be noted that the wells were not sampled in the order listed in the SAP. As discussed with Hydrometrics staff, the order of sampling is important for all wells that do not use dedicated or disposable equipment. During this sampling event, Hydrometrics could not complete the sampling in the proper order due to area construction and vandalism to site HL-94-2. All other variances in sampling order were noted in the field book.

3. FIELD QUALITY CONTROL SAMPLES

- Field blanks
Please note that the highest blank value associated with any particular analyte is the blank value used for the flagging process.

DI, trip, rinsate, or any other field blanks have been carried out at the proper frequency.

☒ Yes

☐ No

Reported results on the field blanks are less than the contract required detection limits (CRDL) or the project required detection limits (PRDL) if project detection limits have been specified.

☒ Yes

☐ No

- **Field duplicates**

Field duplicates have been collected at the proper frequency.

☒ Yes

☐ No

Field duplicate relative percent differences (RPD's) were within the required control limits (RPD of 20 percent or less for water matrix, 35 percent or less for soil matrix). If the sample or duplicate result is less than 5 times the PRDL, the RPD criteria are not used. In these cases, the difference between the sample and the duplicate results must be within $\pm$ the PRDL for water matrix, within $\pm$ 2 times the PRDL for soil matrix.

☐ Yes

☒ No (see the following notes)

NOTES: In field duplicate sample pair, HL-0906-114 and HL-0906-115 (HL-90-3), one exceedance occurred for chemical oxygen demand resulting in six associated results being flagged.

- **Field standards**

Field standards were sent at the proper frequency

☐ Yes

☐ No

☒ NA - Not required by the work plan.

4. LABORATORY PROCEDURES

- **Laboratory procedures followed**

☐ CLP-SOW

☒ SW-846

☒ Methods for Chemical Analysis of Water and Wastes

☐ XRF Standard Operating Procedures

☐ Other

NOTES: Energy Laboratories noted on the sample receipt checklist that sulfuric acid was added to the nutrient sample HL-0906-113. This sample was preserved in the field but did not meet the <2.0 requirement of the laboratory. Proper corrective action was taken by laboratory staff by adding the proper preservative to the sample along with noting as such in the laboratory receipt checklist. In addition, on the laboratory checklist pH was marked as unacceptable due to the addition of acid in sample HL-0906-113 but was not labeled as such on the laboratory analysis report.

- **Samples were received by the laboratory at the proper temperature**

☒ Yes

☐ No

- **Holding times met**

☐ Yes

☒ No (see the following notes)

NOTES: Energy Laboratories exceeded the holding time for pH for all samples submitted. However, as a rule holding times for laboratory pH measurements are frequently exceeded because measurements are typically not conducted "immediately", but rather as soon as practicable. Therefore, no qualifiers are applied for lab pH holding time exceedances.

- **Consistency with project requirements**

Analyses were carried out as requested.

☒ Yes

☐ No

Project specified methods were used.

☒ Yes (see following notes)

☐ No

NOTES: It should be noted that Energy Laboratories used a different method than stated in the work plan on the following parameters: pH, SC, cyanide, antimony, cadmium, lead, and thallium. However, no associated data was flagged because the methods used are considered comparable to stated methods in work plan.

5. DETECTION LIMITS

- Reporting detection limits met project required detection limits (PRDL).

☒ Yes (see following notes)

☐ No

NOTES: It should be noted that Energy Laboratories raised the reporting limit for nitrate + nitrite as n in several samples and also for total cyanide in one sample due to a sample matrix interference. The reporting limits used for dissolved antimony and thallium were lower than the requested limits, and did not seem to impact the results.

6. LABORATORY BLANKS

Please note that the highest blank value associated with any particular analyte is the blank value used for the flagging process.

- **Preparation/Method blanks**

Preparation/Method blanks were prepared and analyzed at the required frequency.

☒ Yes

☐ No

All analytes in the preparation blank were less than the CRDL (or PRDL if a project detection limit has been specified).

☒ Yes (see following notes)

☐ No

NOTES: Low concentrations of some parameters were noted in the laboratory method blanks; however, all results were below the project required detection limit.

7. LABORATORY BLANK SPIKES

- **Blank Spikes**

Blank spikes (organics) were prepared and analyzed at the required frequency.

☒ Yes

☐ No

Blank spike recoveries were within control limits.

☒ Yes

☐ No

8. SURROGATE SPIKES

- **Surrogate Spikes**

Surrogate spikes were prepared and analyzed at the required frequency.

☒ Yes

☐ No

Surrogate spike recoveries were within control limits.

☒ Yes

☐ No

9. MATRIX SPIKE /MATRIX SPIKE DUPLICATES (MS/MSD)

- Matrix spike samples were analyzed at the proper frequency.

☒ Yes

☐ No

Matrix spike recoveries were within control limits.

☐ Yes

☒ No (see following notes)

- Matrix spike duplicate samples were analyzed at the proper frequency.

☒ Yes

☐ No

Matrix spike duplicate RPD's were within control limits.

☐ Yes

☒ No (see following notes)

NOTES: Both matrix spike and matrix spike duplicate samples had several QC exceedances. At this level of validation, these exceedances are only noted and no flagging of the associated data occurs.

10. INTERPARAMETER RELATIONSHIPS

- The following relationships have been checked for all data from the June 2009 monitoring:

☒ Lab SC versus field SC

☒ Lab pH versus field pH

Lab SC versus field SC: A comparison of the field and lab SCs using a percent difference (%D) criteria for evaluation purposes, showed that none of the SC pairs exceeded the ten percent comparison criteria.

Lab pH versus field pH: A comparison of the field and lab pHs using a percent difference (%D) criteria for evaluation purposes, showed that also none of the pH pairs exceeded the ten percent comparison criteria.

11. HISTORICAL COMPARISON

Current sampling event data (June 2009) were compared to historical data (June 2005 through May 2009). The data for the June 2009 sampling event was similar to historic data.

12. DATA QUALITY OBJECTIVES

- Project data quality objectives (DQO's) met.

☒ Yes
☐ No

Accuracy

Accuracy for this project is the agreement between a measured value and a true value and is measured by the recoveries on the laboratory matrix spikes and laboratory control samples.

Accuracy for this sampling event was 99 percent.

Precision

Precision for this project is the degree of variability between duplicate measurements. Laboratory analytical variability is measured by laboratory duplicates; field duplicates are a measure of overall variability in both field sampling and laboratory techniques.

Laboratory precision was 97 percent for this sampling event.

Field precision was 99 percent for this sampling event.

Completeness

The target completeness for this project is 90 percent of the measurements valid (not rejected). This percentage is based on the number of valid measurements compared to the number of planned measurements.

Completeness for this sampling event was 100 percent. It should be noted that residential site 90 sampling could not be completed. Hydrometrics staff was unable to contact landowners for land access approval after several attempts. Also, site HL-94-2 was vandalized and could not be sampled during this event.

DATA VALIDATION REPORT

Prepared by: Ericka Vallance

Reviewed by: Jodi Bingham, P.E.

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TABLE L

DATA VALIDATION CODES AND DEFINITIONS

CODE	DEFINITION
1	The associated estimated value is an estimated quantity associated with a specific criterion or measurement.
11	Blank water sample - indicates sample has been used in this position. The associated value is zero.
12	Sample changed in this position due to data not correctly interpreted, sample was not for analysis. Resampling for this sample is necessary for analysis.
13	Associated data is missing or incomplete for this sample in this position. (Note: TLA data.)

APPENDIX 1

TABLES

TABLE 1.

DATA VALIDATION CODES AND DEFINITIONS

<u>CODE</u>	<u>DEFINITION</u>
J -	The associated numerical value is an estimated quantity because quality control criteria were not met.
U -	Blank contamination. Indicates possible high bias and / or false positive. The associated value is an estimate.
R -	Quality control indicates that the data are unusable (compound may or may not be present). Resampling and/or reanalysis is necessary for verification.
A -	Anomalous data. No apparent explanation for discrepancy in data. (Not an EPA code.)

Table 2. Summary of Flagged Data

CHHL01 - City of Helena

SITE CODE	SAMPLE NUMBER	LAB NUMBER	SAMPLE DATE	PARAMETER	RESULT	FLAGS	RPD	EXCEEDNACE TYPE
HL-90-2	HL-0906-110	9060177011	06/10/2009	CHEMICAL OXYGEN DEMAND	1	J4D	PRDL	DUPLICATE
HL-94-1	HL-0906-111	9060177012	06/10/2009	CHEMICAL OXYGEN DEMAND	4.0	J4D	PRDL	DUPLICATE
HL-06-1	HL-0906-113	9060177013	06/10/2009	CHEMICAL OXYGEN DEMAND	<1	UJ4D	PRDL	DUPLICATE
HL-90-3	HL-0906-114	9060177014	06/10/2009	CHEMICAL OXYGEN DEMAND	3.0	J4D	PRDL	DUPLICATE
HL-90-3	HL-0906-115	9060177015	06/10/2009	CHEMICAL OXYGEN DEMAND	5	J4D	PRDL	DUPLICATE
HL-94-3	HL-0906-116	9060177016	06/10/2009	CHEMICAL OXYGEN DEMAND	<1	UJ4D	PRDL	DUPLICATE
MPC-1	HL-0906-118	9060177017	06/10/2009	CHEMICAL OXYGEN DEMAND	2	J4D	PRDL	DUPLICATE

NOTES: All quantities in mg/L (Water) or mg/kg (Soil) unless noted. RPD: Relative Percent Difference.>PRDL: QC Values within +/- Contract Detection Limit (+/- 2 times CRDL for Soil) for values <5 times Contract Detection Limit.A: Anomalous, UJ1: Blank, J2: Standard, J3: Holding Time, J4D: Duplicate Exceedance, J4K: Spike Exceedence,

Table 3.0
SUMMARY OF THE COMPARISON OF SAMPLING PERIOD DATA TO THE DATABASE PERIOD DATA, SHOWING PARAMETERS THAT ARE HIGHEST OR LOWEST

CHHL01 - City of Helena

VDM Program

SITE	SAMPLE DATE	RESULT mg/L	PARAMETER	COMPARISON DATABASE PERIOD	N	MIN (mg/L)	MEAN (mg/L)	MAX (mg/L)	STD DEVS FROM MEAN	RELATION TO DATABASE PERIOD
16	06/09/2009	0.0015	TETRACHLOROETHENE	06/16/2005-12/18/2008	8	<0.001	0.0011	0.0015		HIGHEST
46	06/09/2009	0.0031	CHLOROFORM	06/17/2005-06/18/2008	7	0.0038	0.0044	0.006		LOWEST
57	06/09/2009	0.0018	TETRACHLOROETHENE	06/16/2005-06/17/2008	5	0.0015	0.0017	0.0018		HIGHEST
EPA-1	06/11/2009	100.0	SULFATE (SO4)	06/17/2005-06/17/2008	7	120.0	138.0000	172	2.03	LOWEST
		120.0	CHLORIDE (CL)	06/17/2005-06/17/2008	7	78.0	84.1429	92.0	6.53	HIGHEST
		0.001	CADMIUM (CD) DIS	06/17/2005-06/17/2008	7	<0.001		<0.001		HIGHEST
HL-06-1	06/10/2009	5.7	NITRATE + NITRITE AS N	12/12/2006-12/11/2008	5	0.81	1.7060	3.8	3.33	HIGHEST
		0.002	CADMIUM (CD) DIS	12/12/2006-12/11/2008	5	<0.001		<0.001		HIGHEST
HL-90-2	06/10/2009	27.0	CHLORIDE (CL)	06/17/2005-06/19/2008	7	33.0	38.1429	46.0	2.33	LOWEST
HL-90-3	06/10/2009	58.0	CHLORIDE (CL)	06/16/2005-06/18/2008	7	39.0	51.0000	57.0	1.13	HIGHEST
		11.6	NITRATE + NITRITE AS N	06/16/2005-06/18/2008	7	6.53	9.1471	10.3	1.89	HIGHEST
HL-94-1	06/10/2009	5.1	NITRATE + NITRITE AS N	06/16/2005-12/10/2008	8	0.98	3.0075	3.92	1.72	HIGHEST
		0.002	CADMIUM (CD) DIS	06/16/2009-12/10/2008	8	<0.001		<0.001		HIGHEST
		0.007	SELENIUM (SE) DIS	06/16/2005-12/10/2008	8	<0.005		<0.005		HIGHEST
HL-94-3	06/10/2009	90.0	CHLORIDE (CL)	06/16/2005-06/18/2008	7	63.0	69.4286	79.0	3.78	HIGHEST
		14.1	NITRATE + NITRITE AS N	06/16/2005-06/18/2008	7	8.0	9.9329	11.4	3.62	HIGHEST
HL-99-1	06/11/2009	170.0	SULFATE (SO4)	06/17/2005-12/11/2008	7	15.0	131.8571	170.0	0.72	HIGHEST
		74.0	CHLORIDE (CL)	06/17/2005-12/11/2008	7	47.0	58.5714	71.0	2.04	HIGHEST
		11.1	NITRATE + NITRITE AS N	06/17/2005-12/11/2008	7	8.77	9.2043	9.6	6.45	HIGHEST
HL-99-2	06/11/2009	0.002	CADMIUM (CD) DIS	06/17/2005-12/11/2008	7	<0.001		<0.001		HIGHEST
		0.006	SELENIUM (SE) DIS	06/17/2005-12/11/2008	7	<0.005		<0.005		HIGHEST
		0.0015	CHLOROFORM	06/17/2005-12/11/2008	13	0.0016	0.0021	0.0026		LOWEST
		0.058	CYANIDE (CN) TOT	06/17/2005-12/11/2008	7	<0.005	0.0076	0.013	14.59	HIGHEST
HL-99-3	06/11/2009	170.0	SULFATE (SO4)	06/17/2005-12/11/2008	8	124.0	144.8750	160.0	1.74	HIGHEST
		10.7	NITRATE + NITRITE AS N	06/17/2005-12/11/2008	8	8.22	8.5938	9.4	4.67	HIGHEST
I-4	06/09/2009	0.0028	1,1-DICHLOROETHANE	06/17/2005-06/18/2008	4	<0.001	0.0016	0.0023		HIGHEST
		0.0025	DICHLORODIFLUOROMETHANE	06/17/2005-06/18/2008	4	<0.001	0.0014	0.002		HIGHEST
		0.0089	TETRACHLOROETHENE	06/17/2005-06/18/2008	4	0.0042	0.0061	0.0088		HIGHEST
		0.0019	TRICHLOROETHENE	06/17/2005-06/18/2008	4	<0.001	0.0013	0.0016		HIGHEST
MPC-1	06/10/2009	13.1	NITRATE + NITRITE AS N	06/17/2005-06/18/2008	7	11.3	11.9857	12.8	2.01	HIGHEST
MPC-5	06/11/2009	0.001	CADMIUM (CD) DIS	06/17/2005-12/11/2008	8	<0.001		<0.001		HIGHEST
		0.01	SELENIUM (SE) DIS	06/17/2005-12/11/2008	8	<0.005	0.0066	0.008		HIGHEST

NOTES: All quantities in mg/L (Water) or mg/kg (Soil) unless noted. All results LABORATORY unless field (FLD) or calculated (CALCN: Number of samples in comparison data set; # OF DET: Number of samples in data set above detection limit; SD: is Standard DeviatA & R Flags were excluded from Statistics. The detection limit was used in calculations.

APPENDIX 2

DATABASE

ANALYSES SUMMARY REPORT

CHHL01 - City of Helena

VDM Program

Lab	06/10/09... 1, 11, 13, 14, 15,	HL-0906-129 9
EL2, 3, 6, 8, 11, 13, 15,	17, 18, 20, 21, 23, 24,	HL-0906-130 10
17, 18, 20, 21, 23, 25,	25, 27, 38, 40, 50, 51, 53	HL-0906-131 5
27, 28, 30, 31, 33, 34,	06/11/09 6, 8, 28, 30, 31, 33,	Site Code
36, 37, 38, 40, 41, 42,	34, 36, 42, 44, 54, 56, 57	1646
44, 45, 46, 47, 48, 49,	06/12/09..... 4, 5, 9, 10	4047
50, 51, 53, 54, 56, 57	Sample Number	4848
HYDRO. 1, 4, 5, 9, 10, 14, 24	HL-0906-100 2	5 45
Lab Number	HL-0906-101 41	5249
9060177001 2	HL-0906-102 46	573
9060177002 41	HL-0906-103 45	6250
9060177003 46	HL-0906-104 47	82-3..... 4
9060177004 45	HL-0906-105 3	83-7..... 5
9060177005 47	HL-0906-106 49	D.I. BLANK 51, 53
9060177006 3	HL-0906-107 48	EPA-1 6, 8
9060177007 49	HL-0906-108 37	EPA-2 9
9060177008 48	HL-0906-109 50	EPA-4 10
9060177009 37	HL-0906-110 15, 17	HL-06-1 11, 13
9060177010 50	HL-0906-111 21, 23	HL-90-1 14
9060177011 15, 17	HL-0906-112 24	HL-90-2 15, 17
9060177012 21, 23	HL-0906-113 11, 13	HL-90-3 18, 20
9060177013 11, 13	HL-0906-114 18, 20	HL-94-1 21, 23
9060177014 18, 20	HL-0906-115 18, 20	HL-94-2 24
9060177015 18, 20	HL-0906-116 25, 27	HL-94-3 25, 27
9060177016 25, 27	HL-0906-117 14	HL-99-1 28, 30
9060177017 38, 40	HL-0906-118 38, 40	HL-99-2 31, 33
9060177018 51, 53	HL-0906-119 51, 53	HL-99-3 34, 36
9060204001 6, 8	HL-0906-120 6, 8	I-1 1
9060204002 42, 44	HL-0906-121 42, 44	I-4 37
9060204003 28, 30	HL-0906-122 28, 30	INF. GALLERY..... 2
9060204004 31, 33	HL-0906-123 31, 33	MPC-1 38, 40
9060204005 34, 36	HL-0906-124 34, 36	MPC-2 41
9060204006 54, 56	HL-0906-125 54, 56	MPC-5 42, 44
9060204007 57	HL-0906-126 57	RINSBLANK 54, 56
Sample Date	HL-0906-127 1	TRIPBLANK 57
06/09/09 2, 3, 37, 41, 45, 46,	HL-0906-128 4	
47, 48, 49		

NOTES: All results in mg/L (Water) or mg/kg (Soil) unless noted and are laboratory (LAB) unless field (FLD) or calculated (CALC)TOT:Total; DIS:Disolved, TRC:Total Recoverable; E:Estimated; <:Less than Detect; Blank: parameter not testedValidation Flags: A:Anomalous; UJ1:Blank; J2,UJ2: Standard; J3:Hold Time; J4,UJ4:Duplicate, Spike or Split Exceedance; R:Rejected

ANALYSES SUMMARY REPORT

CHHL01 - City of Helena

VDM Program

Sample Type:Irrigation Well

SITE CODE I-1
 SAMPLE DATE 06/10/09
 LAB HYDRO
 SAMPLE NUMBER HL-0906-127
 LAB NUMBER
 REMARKS NO SAMPLE

-- PHYSICAL PARAMETERS --

DEPTH TO WATER LEVEL (FEET) 65.92

NOTES: All results in mg/L (Water) or mg/kg (Soil) unless noted and are laboratory (LAB) unless field (FLD) or calculated (CALC)TOT:Total; DIS:Disolved, TRC:Total Recoverable; E:Estimated; <:Less than Detect; Blank: parameter not testedValidation Flags: A:Anomalous; UJ1:Blank; J2,UJ2: Standard; J3:Hold Time; J4,UJ4:Duplicate, Spike or Split Exceedance; R:Rejected

ANALYSES SUMMARY REPORT

CHHL01 - City of Helena

VDM Program

Sample Type:Irrigation Well

SITE CODE	INF. GALLERY
SAMPLE DATE	06/09/09
LAB	EL
SAMPLE NUMBER	HL-0906-100
LAB NUMBER	9060177001
REMARKS	

-- PHYSICAL PARAMETERS --

DEPTH TO WATER LEVEL (FEET)	6.23
PH (FLD)	7.77
SC (UMHOS/CM AT 25 C) (FLD)	424
WATER TEMPERATURE (C) (FLD)	12.2

-- VOLATILE ORGANICS --

1,1,1,2-TETRACHLOROETHANE	<0.001
1,1,1-TRICHLOROETHANE	<0.001
1,1,2,2-TETRACHLOROETHANE	<0.001
1,1,2-TRICHLOROETHANE	<0.001
1,1-DICHLOROETHANE	<0.001
1,1-DICHLOROETHENE	<0.001
1,2-DIBROMOETHANE	<0.001
1,2-DICHLOROETHANE	<0.001
1,2-DICHLOROPROPANE	<0.001
2-HEXANONE	<0.02
ACETONE	<0.02
ACRYLONITRILE	<0.02
BENZENE	<0.001
BROMOCHLOROMETHANE	<0.001
BROMODICHLOROMETHANE	<0.001
BROMOFORM	<0.001
BROMOMETHANE	<0.001
CARBON DISULFIDE	<0.001
CARBON TETRACHLORIDE	<0.001
CHLOROBENZENE	<0.001
CHLORODIBROMOMETHANE	<0.001
CHLOROETHANE	<0.001
CHLOROFORM	<0.001
CHLOROMETHANE	<0.001
CIS-1,2-DICHLOROETHENE	<0.001
CIS-1,3-DICHLOROPROPENE	<0.001
DIBROMOMETHANE	<0.001
DICHLORODIFLUOROMETHANE	<0.001
ETHYLBENZENE	<0.001
IODOMETHANE	<0.001
M-P XYLENE	<0.001
METHYL ETHYL KETONE	<0.02
METHYL ISOBUTYL KETONE	<0.02
METHYLENE CHLORIDE	<0.001
O-XYLENE	<0.001
STYRENE	<0.001
TETRACHLOROETHENE	<0.001
TOLUENE	<0.001
TOTAL XYLENE	<0.001
TRANS-1,2-DICHLOROETHENE	<0.001
TRANS-1,3-DICHLOROPROPENE	<0.001
TRICHLOROETHENE	<0.001
TRICHLOROFLUOROMETHANE	<0.001
VINYL ACETATE	<0.001
VINYL CHLORIDE	<0.001

-- SEMI-VOLATILE EXTRACTABLES --

1,2,3-TRICHLOROPROPANE	<0.001
1,2-DIBROMO-3-CHLOROPROPANE	<0.001
1,2-DICHLOROBENZENE	<0.001
1,4-DICHLOROBENZENE	<0.001
TRANS-1,4-DICHLORO-2-BUTENE	<0.001

NOTES: All results in mg/L (Water) or mg/kg (Soil) unless noted and are laboratory (LAB) unless field (FLD) or calculated (CALC)TOT:Total; DIS:Dissolved, TRC:Total Recoverable; E:Estimated; <:Less than Detect; Blank: parameter not testedValidation Flags: A:Anomalous; UJ1:Blank; J2,UJ2: Standard; J3:Hold Time; J4,UJ4:Duplicate, Spike or Split Exceedance; R:Rejected

ANALYSES SUMMARY REPORT

CHHL01 - City of Helena

VDM Program

Sample Type: Monitoring Wells

SITE CODE	57
SAMPLE DATE	06/09/09
LAB	EL
SAMPLE NUMBER	HL-0906-105
LAB NUMBER	9060177006
REMARKS	

```
-- PHYSICAL PARAMETERS --
      PH (FLD)                7.67
      SC (UMHOS/CM AT 25 C) (FLD) 1528
      WATER TEMPERATURE (C) (FLD) 10.2
-- VOLATILE ORGANICS --
      1,1,1,2-TETRACHLOROETHANE <0.001
      1,1,1-TRICHLOROETHANE <0.001
      1,1,2,2-TETRACHLOROETHANE <0.001
      1,1,2-TRICHLOROETHANE <0.001
      1,1-DICHLOROETHANE <0.001
      1,1-DICHLOROETHENE <0.001
      1,2-DIBROMOETHANE <0.001
      1,2-DICHLOROETHANE <0.001
      1,2-DICHLOROPROPANE <0.001
      2-HEXANONE <0.02
      ACETONE <0.02
      ACRYLONITRILE <0.02
      BENZENE <0.001
      BROMOCHLOROMETHANE <0.001
      BROMODICHLOROMETHANE <0.001
      BROMOFORM <0.001
      BROMOMETHANE <0.001
      CARBON DISULFIDE <0.001
      CARBON TETRACHLORIDE <0.001
      CHLOROBENZENE <0.001
      CHLORODIBROMOMETHANE <0.001
      CHLOROETHANE <0.001
      CHLOROFORM 0.0028
      CHLOROMETHANE <0.001
      CIS-1,2-DICHLOROETHENE <0.001
      CIS-1,3-DICHLOROPROPENE <0.001
      DIBROMOMETHANE <0.001
      DICHLORODIFLUOROMETHANE <0.001
      ETHYLBENZENE <0.001
      IODOMETHANE <0.001
      M-P XYLENE <0.001
      METHYL ETHYL KETONE <0.02
      METHYL ISOBUTYL KETONE <0.02
      METHYLENE CHLORIDE <0.001
      O-XYLENE <0.001
      STYRENE <0.001
      TETRACHLOROETHENE 0.0018
      TOLUENE <0.001
      TOTAL XYLENE <0.001
      TRANS-1,2-DICHLOROETHENE <0.001
      TRANS-1,3-DICHLOROPROPENE <0.001
      TRICHLOROETHENE <0.001
      TRICHLOROFLUOROMETHANE <0.001
      VINYL ACETATE <0.001
      VINYL CHLORIDE <0.001
-- SEMI-VOLATILE EXTRACTABLES --
      1,2,3-TRICHLOROPROPANE <0.001
      1,2-DIBROMO-3-CHLOROPROPANE <0.001
      1,2-DICHLOROBENZENE <0.001
      1,4-DICHLOROBENZENE <0.001
      TRANS-1,4-DICHLORO-2-BUTENE <0.001
```

NOTES: All results in mg/L (Water) or mg/kg (Soil) unless noted and are laboratory (LAB) unless field (FLD) or calculated (CALC) TOT: Total; DIS: Dissolved, TRC: Total Recoverable; E: Estimated; <: Less than Detect; Blank: parameter not tested Validation Flags: A: Anomalous; UJ1: Blank; J2, UJ2: Standard; J3: Hold Time; J4, UJ4: Duplicate, Spike or Split Exceedance; R: Rejected

ANALYSES SUMMARY REPORT

CHHL01 - City of Helena

VDM Program

Sample Type:Monitoring Wells

SITE CODE	82-3
SAMPLE DATE	06/12/09
LAB	HYDRO
SAMPLE NUMBER	HL-0906-128
LAB NUMBER	
REMARKS	NO SAMPLE

-- PHYSICAL PARAMETERS --

DEPTH TO WATER LEVEL (FEET)	69.92
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NOTES: All results in mg/L (Water) or mg/kg (Soil) unless noted and are laboratory (LAB) unless field (FLD) or calculated (CALC)TOT:Total; DIS:Disolved, TRC:Total Recoverable; E:Estimated; <:Less than Detect; Blank: parameter not testedValidation Flags: A:Anomalous; UJ1:Blank; J2,UJ2: Standard; J3:Hold Time; J4,UJ4:Duplicate, Spike or Split Exceedance; R:Rejected

ANALYSES SUMMARY REPORT

CHHL01 - City of Helena

generated by VDM Program

Sample Type:Monitoring Wells

SITE CODE 63-7
 SAMPLE DATE 06/12/09
 LAB HYDRO
 SAMPLE NUMBER HL-0906-131
 LAB NUMBER
 REMARKS NO SAMPLE

-- PHYSICAL PARAMETERS --

DEPTH TO WATER LEVEL (FEET) DRY

NOTES: All results in mg/L (Water) or mg/kg (Soil) unless noted and are laboratory (LAB) unless field (FLD) or calculated (CALC)TOT:Total; DIS:Disolved, TRC:Total Recoverable; E:Estimated; <:Less than Detect; Blank: parameter not testedValidation Flags: A:Anomalous; UJ1:Blank; J2,UJ2: Standard; J3:Hold Time; J4,UJ4:Duplicate, Spike or Split Exceedance; R:Rejected

ANALYSES SUMMARY REPORT

CHHL01 - City of Helena

VDM Program

Sample Type:Monitoring Wells

SITE CODE	EPA-1
SAMPLE DATE	06/11/09
LAB	EL
SAMPLE NUMBER	HL-0906-120
LAB NUMBER	9060204001
REMARKS	

-- PHYSICAL PARAMETERS --

DEPTH TO WATER LEVEL (FEET)	49.31
PH	7.2
PH (FLD)	6.87
SC (UMHOS/CM AT 25 C)	1450.0
SC (UMHOS/CM AT 25 C) (FLD)	1592
WATER TEMPERATURE (C) (FLD)	11.1

-- MAJOR CONSTITUENTS --

CHLORIDE (CL)	120.0
SULFATE (SO4)	100.0

-- NUTRIENTS --

NITRATE + NITRITE AS N	3.99
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-- METALS & MINOR CONSTITUENTS --

ANTIMONY (SB) DIS	<0.005
ARSENIC (AS) DIS	<0.005
BARIUM (BA) DIS	<0.1
BERYLLIUM (BE) DIS	<0.001
CADMIUM (CD) DIS	0.001
CHROMIUM (CR) DIS	<0.01
COBALT (CO) DIS	<0.01
COPPER (CU) DIS	<0.01
IRON (FE) DIS	0.08
LEAD (PB) DIS	<0.01
MERCURY (HG) DIS	<0.001
NICKEL (NI) DIS	0.01
SELENIUM (SE) DIS	<0.005
SILVER (AG) DIS	<0.005
THALLIUM (TL) DIS	<0.005
VANADIUM (V) DIS	<0.1
ZINC (ZN) DIS	<0.01

-- VOLATILE ORGANICS --

1,1,1,2-TETRACHLOROETHANE	<0.001
1,1,1-TRICHLOROETHANE	<0.001
1,1,2,2-TETRACHLOROETHANE	<0.001
1,1,2-TRICHLOROETHANE	<0.001
1,1-DICHLOROETHANE	<0.001
1,1-DICHLOROETHENE	<0.001
1,2-DIBROMOETHANE	<0.001
1,2-DICHLOROETHANE	<0.001
1,2-DICHLOROPROPANE	<0.001
2-HEXANONE	<0.02
ACETONE	<0.02
ACRYLONITRILE	<0.02
BENZENE	<0.001
BROMOCHLOROMETHANE	<0.001
BROMODICHLOROMETHANE	<0.001
BROMOFORM	<0.001
BROMOMETHANE	<0.001
CARBON DISULFIDE	<0.001
CARBON TETRACHLORIDE	<0.001
CHLOROBENZENE	<0.001
CHLORODIBROMOMETHANE	<0.001
CHLOROETHANE	<0.001
CHLOROFORM	<0.001
CHLOROMETHANE	<0.001
CIS-1,2-DICHLOROETHENE	<0.001
CIS-1,3-DICHLOROPROPENE	<0.001
DIBROMOMETHANE	<0.001
DICHLORODIFLUOROMETHANE	<0.001
ETHYLBENZENE	<0.001
IODOMETHANE	<0.001
M-P XYLENE	<0.001
METHYL ETHYL KETONE	<0.02
METHYL ISOBUTYL KETONE	<0.02
METHYLENE CHLORIDE	<0.001
O-XYLENE	<0.001
STYRENE	<0.001
TETRACHLOROETHENE	0.0018
TOLUENE	<0.001
TOTAL XYLENE	<0.001
TRANS-1,2-DICHLOROETHENE	<0.001
TRANS-1,3-DICHLOROPROPENE	<0.001
TRICHLOROETHENE	<0.001
TRICHLOROFLUOROMETHANE	<0.001
VINYL ACETATE	<0.001
VINYL CHLORIDE	<0.001

-- SEMI-VOLATILE EXTRACTABLES --

1,2,3-TRICHLOROPROPANE	<0.001
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NOTES: All results in mg/L (Water) or mg/kg (Soil) unless noted and are laboratory (LAB) unless field (FLD) or calculated (CALC) TOT:Total; DIS:Dissolved; TRC:Total Recoverable; E:Estimated; <:Less than Detect; Blank: parameter not tested Validation Flags: A:Anomalous; UJ1:Blank; J2,UJ2: Standard; J3:Hold Time; J4,UJ4:Duplicate, Spike or Split Exceedance; R:Rejected

ANALYSES SUMMARY REPORT

CHHL01 - City of Helena

VDM Program

Sample Type:Monitoring Wells

SITE CODE	EPA-1
SAMPLE DATE	06/11/09
LAB	EL
SAMPLE NUMBER	HL-0906-120
LAB NUMBER	9060204001
REMARKS	
1,2-DIBROMO-3-CHLOROPROPANE	<0.001
1,2-DICHLOROBENZENE	<0.001
1,4-DICHLOROBENZENE	<0.001
TRANS-1,4-DICHLORO-2-BUTENE	<0.001
-- OTHER PARAMETERS --	
CHEMICAL OXYGEN DEMAND	4.0
CYANIDE (CN) TOT	<0.005

NOTES: All results in mg/L (Water) or mg/kg (Soil) unless noted and are laboratory (LAB) unless field (FLD) or calculated (CALC)TOT:Total; DIS:Dissolved, TRC:Total Recoverable; E:Estimated; <:Less than Detect; Blank: parameter not testedValidation Flags: A:Anomalous; UJ1:Blank; J2,UJ2: Standard; J3:Hold Time; J4,UJ4:Duplicate, Spike or Split Exceedance; R:Rejected

ANALYSES SUMMARY REPORT

CHHL01 - City of Helena

VDM Program

Sample Type:Monitoring Wells

SITE CODE	EPA-2
SAMPLE DATE	06/12/09
LAB	HYDRO
SAMPLE NUMBER	HL-0906-129
LAB NUMBER	
REMARKS	NO SAMPLE

-- PHYSICAL PARAMETERS --

DEPTH TO WATER LEVEL (FEET)	NO ACCESS
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NOTES: All results in mg/L (Water) or mg/kg (Soil) unless noted and are laboratory (LAB) unless field (FLD) or calculated (CALC)TOT:Total; DIS:Dissolved, TRC:Total Recoverable; E:Estimated; <:Less than Detect; Blank: parameter not testedValidation Flags: A:Anomalous; UJ1:Blank; J2,UJ2: Standard; J3:Hold Time; J4,UJ4:Duplicate, Spike or Split Exceedance; R:Rejected

ANALYSES SUMMARY REPORT

CHHL01 - City of Helena

VDM Program

Sample Type:Monitoring Wells

SITE CODE	EPA-4
SAMPLE DATE	06/12/09
LAB	HYDRO
SAMPLE NUMBER	HL-0906-130
LAB NUMBER	
REMARKS	NO SAMPLE

-- PHYSICAL PARAMETERS --

DEPTH TO WATER LEVEL (FEET)	75.64
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NOTES: All results in mg/L (Water) or mg/kg (Soil) unless noted and are laboratory (LAB) unless field (FLD) or calculated (CALC)TOT:Total; DIS:Disolved, TRC:Total Recoverable; E:Estimated; <:Less than Detect; Blank: parameter not testedValidation Flags: A:Anomalous; UJ1:Blank; J2,UJ2: Standard; J3:Hold Time; J4,UJ4:Duplicate, Spike or Split Exceedance; R:Rejected

ANALYSES SUMMARY REPORT

CHHL01 - City of Helena

VDM Program

Sample Type:Monitoring Wells

SITE CODE	HL-06-1
SAMPLE DATE	06/10/09
LAB	EL
SAMPLE NUMBER	HL-0906-113
LAB NUMBER	9060177013
REMARKS	
-- PHYSICAL PARAMETERS --	
DEPTH TO WATER LEVEL (FEET)	19.66
PH	7.1
PH (FLD)	6.78
SC (UMHOS/CM AT 25 C)	1340
SC (UMHOS/CM AT 25 C) (FLD)	1385
WATER TEMPERATURE (C) (FLD)	12.2
-- MAJOR CONSTITUENTS --	
CHLORIDE (CL)	32
SULFATE (SO4)	200
-- NUTRIENTS --	
NITRATE + NITRITE AS N	5.7
-- METALS & MINOR CONSTITUENTS --	
ANTIMONY (SB) DIS	<0.005
ARSENIC (AS) DIS	<0.005
BARIUM (BA) DIS	<0.1
BERYLLIUM (BE) DIS	<0.001
CADMIUM (CD) DIS	0.002
CHROMIUM (CR) DIS	<0.01
COBALT (CO) DIS	<0.01
COPPER (CU) DIS	<0.01
IRON (FE) DIS	<0.03
LEAD (PB) DIS	<0.01
MERCURY (HG) DIS	<0.001
NICKEL (NI) DIS	<0.01
SELENIUM (SE) DIS	<0.005
SILVER (AG) DIS	<0.005
THALLIUM (TL) DIS	<0.005
VANADIUM (V) DIS	<0.1
ZINC (ZN) DIS	<0.01
-- VOLATILE ORGANICS --	
1,1,1,2-TETRACHLOROETHANE	<0.001
1,1,1-TRICHLOROETHANE	0.0044
1,1,2,2-TETRACHLOROETHANE	<0.001
1,1,2-TRICHLOROETHANE	<0.001
1,1-DICHLOROETHANE	<0.001
1,1-DICHLOROETHENE	<0.001
1,2-DIBROMOETHANE	<0.001
1,2-DICHLOROETHANE	<0.001
1,2-DICHLOROPROPANE	<0.001
2-HEXANONE	<0.02
ACETONE	<0.02
ACRYLONITRILE	<0.02
BENZENE	<0.001
BROMOCHLOROMETHANE	<0.001
BROMODICHLOROMETHANE	<0.001
BROMOFORM	<0.001
BROMOMETHANE	<0.001
CARBON DISULFIDE	<0.001
CARBON TETRACHLORIDE	<0.001
CHLOROBENZENE	<0.001
CHLORODIBROMOMETHANE	<0.001
CHLOROETHANE	<0.001
CHLOROFORM	<0.001
CHLOROMETHANE	<0.001
CIS-1,2-DICHLOROETHENE	<0.001
CIS-1,3-DICHLOROPROPENE	<0.001
DIBROMOMETHANE	<0.001
DICHLORODIFLUOROMETHANE	<0.001
ETHYLBENZENE	<0.001
IODOMETHANE	<0.001
M-P XYLENE	<0.001
METHYL ETHYL KETONE	<0.02
METHYL ISOBUTYL KETONE	<0.02
METHYLENE CHLORIDE	<0.001
O-XYLENE	<0.001
STYRENE	<0.001
TETRACHLOROETHENE	<0.001
TOLUENE	<0.001
TOTAL XYLENE	<0.001
TRANS-1,2-DICHLOROETHENE	<0.001
TRANS-1,3-DICHLOROPROPENE	<0.001
TRICHLOROETHENE	<0.001
TRICHLOROFLUOROMETHANE	<0.001
VINYL ACETATE	<0.001
VINYL CHLORIDE	<0.001
-- SEMI-VOLATILE EXTRACTABLES --	
1,2,3-TRICHLOROPROPANE	<0.001

NOTES: All results in mg/L (Water) or mg/kg (Soil) unless noted and are laboratory (LAB) unless field (FLD) or calculated (CALC)TOT:Total; DIS:Dissolved, TRC:Total Recoverable; E:Estimated; <:Less than Detect; Blank: parameter not testedValidation Flags: A:Anomalous; UJ1:Blank; J2,UJ2: Standard; J3:Hold Time; J4,UJ4:Duplicate, Spike or Split Exceedance; R:Rejected

ANALYSES SUMMARY REPORT

CHHL01 - City of Helena

VDM Program

Sample Type:Monitoring Wells

SITE CODE	HL-06-1
SAMPLE DATE	06/10/09
LAB	EL
SAMPLE NUMBER	HL-0906-113
LAB NUMBER	9060177013

REMARKS	
1,2-DIBROMO-3-CHLOROPROPANE	<0.001
1,2-DICHLOROBENZENE	<0.001
1,4-DICHLOROBENZENE	<0.001
TRANS-1,4-DICHLORO-2-BUTENE	<0.001

-- OTHER PARAMETERS --	
CHEMICAL OXYGEN DEMAND	<1 UJ4
CYANIDE (CN) TOT	<0.005

NOTES: All results in mg/L (Water) or mg/kg (Soil) unless noted and are laboratory (LAB) unless field (FLD) or calculated (CALC)TOT:Total; DIS:Disolved, TRC:Total Recoverable; E:Estimated; <:Less than Detect; Blank: parameter not testedValidation Flags: A:Anomalous; UJ1:Blank; J2,UJ2: Standard; J3:Hold Time; J4,UJ4:Duplicate, Spike or Split Exceedance; R:Rejected

ANALYSES SUMMARY REPORT

CHHL01 - City of Helena

VDM Program

Sample Type:Monitoring Wells

SITE CODE	HL-90-1
SAMPLE DATE	06/10/09
LAB	HYDRO
SAMPLE NUMBER	HL-0906-117
LAB NUMBER	
REMARKS	NO SAMPLE

-- PHYSICAL PARAMETERS --

DEPTH TO WATER LEVEL (FEET)	59.10
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NOTES: All results in mg/L (Water) or mg/kg (Soil) unless noted and are laboratory (LAB) unless field (FLD) or calculated (CALC)TOT:Total; DIS:Dissolved, TRC:Total Recoverable; E:Estimated; <:Less than Detect; Blank: parameter not testedValidation Flags: A:Anomalous; UJ1:Blank; J2,UJ2: Standard; J3:Hold Time; J4,UJ4:Duplicate, Spike or Split Exceedance; R:Rejected

ANALYSES SUMMARY REPORT

CHHL01 - City of Helena

VDM Program

Sample Type:Monitoring Wells

SITE CODE HL-90-2
SAMPLE DATE 06/10/09
LAB EL
SAMPLE NUMBER HL-0906-110
LAB NUMBER 9060177011
REMARKS

```
-- PHYSICAL PARAMETERS --
DEPTH TO WATER LEVEL (FEET)      51.80
PH                                  7.6
PH (FLD)                           7.37
SC (UMHOS/CM AT 25 C)             691
SC (UMHOS/CM AT 25 C) (FLD)       694
WATER TEMPERATURE (C) (FLD)      9.7

-- MAJOR CONSTITUENTS --
CHLORIDE (CL)                      27
SULFATE (SO4)                     50

-- NUTRIENTS --
NITRATE + NITRITE AS N            0.7

-- METALS & MINOR CONSTITUENTS --
ANTIMONY (SB) DIS                  <0.005
ARSENIC (AS) DIS                   <0.005
BARIUM (BA) DIS                    <0.1
BERYLLIUM (BE) DIS                 <0.001
CADMIUM (CD) DIS                   <0.001
CHROMIUM (CR) DIS                  <0.01
COBALT (CO) DIS                    <0.01
COPPER (CU) DIS                    <0.01
IRON (FE) DIS                      <0.03
LEAD (PB) DIS                      <0.01
MERCURY (HG) DIS                   <0.001
NICKEL (NI) DIS                    <0.01
SELENIUM (SE) DIS                  <0.005
SILVER (AG) DIS                    <0.005
THALLIUM (TL) DIS                  <0.005
VANADIUM (V) DIS                   <0.1
ZINC (ZN) DIS                      <0.01

-- VOLATILE ORGANICS --
1,1,1,2-TETRACHLOROETHANE          <0.001
1,1,1-TRICHLOROETHANE              <0.001
1,1,2,2-TETRACHLOROETHANE          <0.001
1,1,2-TRICHLOROETHANE              <0.001
1,1-DICHLOROETHANE                 <0.001
1,1-DICHLOROETHENE                 <0.001
1,2-DIBROMOETHANE                  <0.001
1,2-DICHLOROETHANE                  <0.001
1,2-DICHLOROPROPANE                <0.001
2-HEXANONE                         <0.02
ACETONE                             <0.02
ACRYLONITRILE                      <0.02
BENZENE                             <0.001
BROMOCHLOROMETHANE                  <0.001
BROMODICHLOROMETHANE                <0.001
BROMOFORM                           <0.001
BROMOMETHANE                        <0.001
CARBON DISULFIDE                    <0.001
CARBON TETRACHLORIDE                <0.001
CHLOROBENZENE                       <0.001
CHLORODIBROMOMETHANE                <0.001
CHLOROETHANE                        <0.001
CHLOROFORM                          <0.001
CHLOROMETHANE                       <0.001
CIS-1,2-DICHLOROETHENE              <0.001
CIS-1,3-DICHLOROPROPENE             <0.001
DIBROMOMETHANE                      <0.001
DICHLORODIFLUOROMETHANE             <0.001
ETHYLBENZENE                        <0.001
Iodomethane                         <0.001
M-P XYLENE                          <0.001
METHYL ETHYL KETONE                 <0.02
METHYL ISOBUTYL KETONE              <0.02
METHYLENE CHLORIDE                  <0.001
O-XYLENE                            <0.001
STYRENE                             <0.001
TETRACHLOROETHENE                   <0.001
TOLUENE                             <0.001
TOTAL XYLENE                        <0.001
TRANS-1,2-DICHLOROETHENE            <0.001
TRANS-1,3-DICHLOROPROPENE           <0.001
TRICHLOROETHENE                     <0.001
TRICHLOROFLUOROMETHANE              <0.001
VINYL ACETATE                       <0.001
VINYL CHLORIDE                      <0.001

-- SEMI-VOLATILE EXTRACTABLES --
1,2,3-TRICHLOROPROPANE             <0.001
```

NOTES: All results in mg/L (Water) or mg/kg (Soil) unless noted and are laboratory (LAB) unless field (FLD) or calculated (CALC)TOT:Total; DIS:Dissolved, TRC:Total Recoverable; E:Estimated; <:Less than Detect; Blank: parameter not testedValidation Flags: A:Anomalous; UJ1:Blank; J2,UJ2: Standard; J3:Hold Time; J4,UJ4:Duplicate, Spike or Split Exceedance; R:Rejected

ANALYSES SUMMARY REPORT

CHHL01 - City of Helena

VDM Program

Sample Type:Monitoring Wells

SITE CODE	HL-90-2
SAMPLE DATE	06/10/09
LAB	EL
SAMPLE NUMBER	HL-0906-110
LAB NUMBER	9060177011
REMARKS	
1,2-DIBROMO-3-CHLOROPROPANE	<0.001
1,2-DICHLOROBENZENE	<0.001
1,4-DICHLOROBENZENE	<0.001
TRANS-1,4-DICHLORO-2-BUTENE	<0.001
-- OTHER PARAMETERS --	
CHEMICAL OXYGEN DEMAND	1 J4D
CYANIDE (CN) TOT	<0.005

NOTES: All results in mg/L (Water) or mg/kg (Soil) unless noted and are laboratory (LAB) unless field (FLD) or calculated (CALC)TOT:Total; DIS:Disolved, TRC:Total Recoverable; E:Estimated; <:Less than Detect; Blank: parameter not testedValidation Flags: A:Anomalous; UJ1:Blank; J2,UJ2: Standard; J3:Hold Time; J4,UJ4:Duplicate, Spike or Split Exceedance; R:Rejected

ANALYSES SUMMARY REPORT

CHHL01 - City of Helena

VDM Program

Sample Type:Monitoring Wells

	HL-90-3	HL-90-3
SITE CODE	06/10/09	06/10/09
SAMPLE DATE	EL	EL
LAB	HL-0906-114	HL-0906-115
SAMPLE NUMBER	9060177014	9060177015
LAB NUMBER		DUPLICATE
REMARKS		
-- PHYSICAL PARAMETERS --		
DEPTH TO WATER LEVEL (FEET)	66.54	
PH	7.5	7.6
PH (FLD)	7.19	
SC (UMHOS/CM AT 25 C)	1190	1190
SC (UMHOS/CM AT 25 C) (FLD)	1203	
WATER TEMPERATURE (C) (FLD)	11.3	
-- MAJOR CONSTITUENTS --		
CHLORIDE (CL)	58	58
SULFATE (SO4)	190	190
-- NUTRIENTS --		
NITRATE + NITRITE AS N	11.6	11.4
-- METALS & MINOR CONSTITUENTS --		
ANTIMONY (SB) DIS	<0.005	<0.005
ARSENIC (AS) DIS	<0.005	<0.005
BARIUM (BA) DIS	<0.1	<0.1
BERYLLIUM (BE) DIS	<0.001	<0.001
CADMIUM (CD) DIS	<0.001	<0.001
CHROMIUM (CR) DIS	<0.01	<0.01
COBALT (CO) DIS	<0.01	<0.01
COPPER (CU) DIS	<0.01	<0.01
IRON (FE) DIS	<0.03	<0.03
LEAD (PB) DIS	<0.01	<0.01
MERCURY (HG) DIS	<0.001	<0.001
NICKEL (NI) DIS	<0.01	<0.01
SELENIUM (SE) DIS	<0.005	<0.005
SILVER (AG) DIS	<0.005	<0.005
THALLIUM (TL) DIS	<0.005	<0.005
VANADIUM (V) DIS	<0.1	<0.1
ZINC (ZN) DIS	<0.01	<0.01
-- VOLATILE ORGANICS --		
1,1,1,2-TETRACHLOROETHANE	<0.001	<0.001
1,1,1-TRICHLOROETHANE	<0.001	<0.001
1,1,2,2-TETRACHLOROETHANE	<0.001	<0.001
1,1,2-TRICHLOROETHANE	<0.001	<0.001
1,1-DICHLOROETHANE	<0.001	<0.001
1,1-DICHLOROETHENE	<0.001	<0.001
1,2-DIBROMOETHANE	<0.001	<0.001
1,2-DICHLOROETHANE	<0.001	<0.001
1,2-DICHLOROPROPANE	<0.001	<0.001
2-HEXANONE	<0.02	<0.02
ACETONE	<0.02	<0.02
ACRYLONITRILE	<0.02	<0.02
BENZENE	<0.001	<0.001
BROMOCHLOROMETHANE	<0.001	<0.001
BROMODICHLOROMETHANE	<0.001	<0.001
BROMOFORM	<0.001	<0.001
BROMOMETHANE	<0.001	<0.001
CARBON DISULFIDE	<0.001	<0.001
CARBON TETRACHLORIDE	<0.001	<0.001
CHLOROBENZENE	<0.001	<0.001
CHLORODIBROMOMETHANE	<0.001	<0.001
CHLOROETHANE	<0.001	<0.001
CHLOROFORM	0.0096	0.0092
CHLOROMETHANE	<0.001	<0.001
CIS-1,2-DICHLOROETHENE	<0.001	<0.001
CIS-1,3-DICHLOROPROPENE	<0.001	<0.001
DIBROMOMETHANE	<0.001	<0.001
DICHLORODIFLUOROMETHANE	<0.001	<0.001
ETHYLBENZENE	<0.001	<0.001
IODOMETHANE	<0.001	<0.001
M-P XYLENE	<0.001	<0.001
METHYL ETHYL KETONE	<0.02	<0.02
METHYL ISOBUTYL KETONE	<0.02	<0.02
METHYLENE CHLORIDE	<0.001	<0.001
O-XYLENE	<0.001	<0.001
STYRENE	<0.001	<0.001
TETRACHLOROETHENE	<0.001	<0.001
TOLUENE	<0.001	<0.001
TOTAL XYLENE	<0.001	<0.001
TRANS-1,2-DICHLOROETHENE	<0.001	<0.001
TRANS-1,3-DICHLOROPROPENE	<0.001	<0.001
TRICHLOROETHENE	<0.001	<0.001
TRICHLOROFLUOROMETHANE	<0.001	<0.001
VINYL ACETATE	<0.001	<0.001
VINYL CHLORIDE	<0.001	<0.001
-- SEMI-VOLATILE EXTRACTABLES --		
1,2,3-TRICHLOROPROPANE	<0.001	<0.001

NOTES: All results in mg/L (Water) or mg/kg (Soil) unless noted and are laboratory (LAB) unless field (FLD) or calculated (CALC)TOT:Total; DIS:Disolved; TRC:Total Recoverable; E:Estimated; <:Less than Detect; Blank: parameter not testedValidation Flags: A:Anomalous; UJ1:Blank; J2,UJ2: Standard; J3:Hold Time; J4,UJ4:Duplicate, Spike or Split Exceedance; R:Rejected

ANALYSES SUMMARY REPORT

CHHL01 - City of Helena

VDM Program

Sample Type:Monitoring Wells

SITE CODE	HL-90-3	HL-90-3
SAMPLE DATE	06/10/09	06/10/09
LAB	EL	EL
SAMPLE NUMBER	HL-0906-114	HL-0906-115
LAB NUMBER	9060177014	9060177015
REMARKS		DUPLICATE
1,2-DIBROMO-3-CHLOROPROPANE	<0.001	<0.001
1,2-DICHLOROBENZENE	<0.001	<0.001
1,4-DICHLOROBENZENE	<0.001	<0.001
TRANS-1,4-DICHLORO-2-BUTENE	<0.001	<0.001
-- OTHER PARAMETERS --		
CHEMICAL OXYGEN DEMAND	3.0 J4D	5
CYANIDE (CN) TOT	<0.005	<0.005

NOTES: All results in mg/L (Water) or mg/kg (Soil) unless noted and are laboratory (LAB) unless field (FLD) or calculated (CALC)TOT:Total; DIS:Disolved, TRC:Total Recoverable; E:Estimated; <:Less than Detect; Blank: parameter not testedValidation Flags: A:Anomalous; UJ1:Blank; J2,UJ2: Standard; J3:Hold Time; J4,UJ4:Duplicate, Spike or Split Exceedance; R:Rejected

ANALYSES SUMMARY REPORT

CHHL01 - City of Helena

VDM Program

Sample Type:Monitoring Wells

SITE CODE HL-94-1
SAMPLE DATE 06/10/09
LAB EL
SAMPLE NUMBER HL-0906-111
LAB NUMBER 9060177012
REMARKS

-- PHYSICAL PARAMETERS --

DEPTH TO WATER LEVEL (FEET) 60.86
PH 7.6
PH (FLD) 7.27
SC (UMHOS/CM AT 25 C) 998
SC (UMHOS/CM AT 25 C) (FLD) 1003
WATER TEMPERATURE (C) (FLD) 10.6

-- MAJOR CONSTITUENTS --

CHLORIDE (CL) 23
SULFATE (SO4) 97

-- NUTRIENTS --

NITRATE + NITRITE AS N 5.1

-- METALS & MINOR CONSTITUENTS --

ANTIMONY (SB) DIS <0.005
ARSENIC (AS) DIS <0.005
BARIUM (BA) DIS <0.1
BERYLLIUM (BE) DIS <0.001
CADMIUM (CD) DIS 0.002
CHROMIUM (CR) DIS <0.01
COBALT (CO) DIS <0.01
COPPER (CU) DIS <0.01
IRON (FE) DIS <0.03
LEAD (PB) DIS <0.01
MERCURY (HG) DIS <0.001
NICKEL (NI) DIS <0.01
SELENIUM (SE) DIS 0.007
SILVER (AG) DIS <0.005
THALLIUM (TL) DIS <0.005
VANADIUM (V) DIS <0.1
ZINC (ZN) DIS <0.01

-- VOLATILE ORGANICS --

1,1,1,2-TETRACHLOROETHANE <0.001
1,1,1-TRICHLOROETHANE <0.001
1,1,2,2-TETRACHLOROETHANE <0.001
1,1,2-TRICHLOROETHANE <0.001
1,1-DICHLOROETHANE <0.001
1,1-DICHLOROETHENE <0.001
1,2-DIBROMOETHANE <0.001
1,2-DICHLOROETHANE <0.001
1,2-DICHLOROPROPANE <0.001
2-HEXANONE <0.02
ACETONE <0.02
ACRYLONITRILE <0.02
BENZENE <0.001
BROMOCHLOROMETHANE <0.001
BROMODICHLOROMETHANE <0.001
BROMOFORM <0.001
BROMOMETHANE <0.001
CARBON DISULFIDE <0.001
CARBON TETRACHLORIDE <0.001
CHLOROBENZENE <0.001
CHLORODIBROMOMETHANE <0.001
CHLOROETHANE <0.001
CHLOROFORM 0.0059
CHLOROMETHANE <0.001
CIS-1,2-DICHLOROETHENE <0.001
CIS-1,3-DICHLOROPROPENE <0.001
DIBROMOMETHANE <0.001
DICHLORODIFLUOROMETHANE <0.001
ETHYLBENZENE <0.001
Iodomethane <0.001
M-P XYLENE <0.001
METHYL ETHYL KETONE <0.02
METHYL ISOBUTYL KETONE <0.02
METHYLENE CHLORIDE <0.001
O-XYLENE <0.001
STYRENE <0.001
TETRACHLOROETHENE <0.001
TOLUENE <0.001
TOTAL XYLENE <0.001
TRANS-1,2-DICHLOROETHENE <0.001
TRANS-1,3-DICHLOROPROPENE <0.001
TRICHLOROETHENE <0.001
TRICHLORODIFLUOROMETHANE <0.001
VINYL ACETATE <0.001
VINYL CHLORIDE <0.001

-- SEMI-VOLATILE EXTRACTABLES --

1,2,3-TRICHLOROPROPANE <0.001

NOTES: All results in mg/L (Water) or mg/kg (Soil) unless noted and are laboratory (LAB) unless field (FLD) or calculated (CALC) TOT:Total; DIS:Disolved, TRC:Total Recoverable; E:Estimated; <:Less than Detect; Blank: parameter not tested Validation Flags: A:Anomalous; UJ1:Blank; J2,UJ2: Standard; J3:Hold Time; J4,UJ4:Duplicate, Spike or Split Exceedance; R:Rejected

ANALYSES SUMMARY REPORT

CHHL01 - City of Helena

VDM Program

Sample Type:Monitoring Wells

SITE CODE	HL-94-1
SAMPLE DATE	06/10/09
LAB	EL
SAMPLE NUMBER	HL-0906-111
LAB NUMBER	9060177012
REMARKS	
1,2-DIBROMO-3-CHLOROPROPANE	<0.001
1,2-DICHLOROBENZENE	<0.001
1,4-DICHLOROBENZENE	<0.001
TRANS-1,4-DICHLORO-2-BUTENE	<0.001
-- OTHER PARAMETERS --	
CHEMICAL OXYGEN DEMAND	4.0 J4D
CYANIDE (CN) TOT	<0.005

NOTES: All results in mg/L (Water) or mg/kg (Soil) unless noted and are laboratory (LAB) unless field (FLD) or calculated (CALC)TOT:Total; DIS:Disolved, TRC:Total Recoverable; E:Estimated; <:Less than Detect; Blank: parameter not testedValidation Flags: A:Anomalous; UJ1:Blank; J2,UJ2: Standard; J3:Hold Time; J4,UJ4:Duplicate, Spike or Split Exceedance; R:Rejected

ANALYSES SUMMARY REPORT

CHHL01 - City of Helena

VDM Program

Sample Type:Monitoring Wells

SITE CODE HL-94-2
SAMPLE DATE 06/10/09
LAB HYDRO
SAMPLE NUMBER HL-0906-112
LAB NUMBER
REMARKS NO SAMPLE

-- PHYSICAL PARAMETERS --

DEPTH TO WATER LEVEL (FEET)

PUMPING

NOTES: All results in mg/L (Water) or mg/kg (Soil) unless noted and are laboratory (LAB) unless field (FLD) or calculated (CALC)TOT:Total; DIS:Dissolved, TRC:Total Recoverable; E:Estimated; <:Less than Detect; Blank: parameter not testedValidation Flags: A:Anomalous; UJ1:Blank; J2,UJ2: Standard; J3:Hold Time; J4,UJ4:Duplicate, Spike or Split Exceedance; R:Rejected

ANALYSES SUMMARY REPORT

VDM Program

CHHL01 - City of Helena

Sample Type:Monitoring Wells

SITE CODE	HL-94-3
SAMPLE DATE	06/10/09
LAB	EL
SAMPLE NUMBER	HL-0906-116
LAB NUMBER	9060177016
REMARKS	

```
-- PHYSICAL PARAMETERS --
  DEPTH TO WATER LEVEL (FEET)      37.86
                                     PH      7.8
                                     PH (FLD) 7.46
  SC (UMHOS/CM AT 25 C)            961
  SC (UMHOS/CM AT 25 C) (FLD)      980
  WATER TEMPERATURE (C) (FLD)     11.1
-- MAJOR CONSTITUENTS --
  CHLORIDE (CL)                     90
  SULFATE (SO4)                     160
-- NUTRIENTS --
  NITRATE + NITRITE AS N           14.1
-- METALS & MINOR CONSTITUENTS --
  ANTIMONY (SB) DIS                 <0.005
  ARSENIC (AS) DIS                  <0.005
  BARIUM (BA) DIS                   <0.1
  BERYLLIUM (BE) DIS                <0.001
  CADMIUM (CD) DIS                 <0.001
  CHROMIUM (CR) DIS                 <0.01
  COBALT (CO) DIS                  <0.01
  COPPER (CU) DIS                  <0.01
  IRON (FE) DIS                    <0.03
  LEAD (PB) DIS                    <0.01
  MERCURY (HG) DIS                 <0.001
  NICKEL (NI) DIS                  <0.01
  SELENIUM (SE) DIS                <0.005
  SILVER (AG) DIS                  <0.005
  THALLIUM (TL) DIS                <0.005
  VANADIUM (V) DIS                 <0.1
  ZINC (ZN) DIS                    <0.01
-- VOLATILE ORGANICS --
  1,1,1,2-TETRACHLOROETHANE        <0.001
  1,1,1-TRICHLOROETHANE            <0.001
  1,1,2,2-TETRACHLOROETHANE        <0.001
  1,1,2-TRICHLOROETHANE            <0.001
  1,1-DICHLOROETHANE               <0.001
  1,1-DICHLOROETHENE               <0.001
  1,2-DIBROMOETHANE                <0.001
  1,2-DICHLOROETHANE               <0.001
  1,2-DICHLOROPROPANE              <0.001
  2-HEXANONE                       <0.02
  ACETONE                          <0.02
  ACRYLONITRILE                    <0.01
  BENZENE                          <0.001
  BROMOCHLOROMETHANE               <0.001
  BROMODICHLOROMETHANE             <0.001
  BROMOFORM                        <0.001
  BROMOMETHANE                     <0.001
  CARBON DISULFIDE                  <0.001
  CARBON TETRACHLORIDE              <0.001
  CHLOROBENZENE                    <0.001
  CHLORODIBROMOMETHANE             <0.001
  CHLOROETHANE                     <0.001
  CHLOROFORM                       0.0073
  CHLOROMETHANE                    <0.001
  CIS-1,2-DICHLOROETHENE            <0.001
  CIS-1,3-DICHLOROPROPENE           <0.001
  DIBROMOMETHANE                   <0.001
  DICHLORODIFLUOROMETHANE          <0.001
  ETHYLBENZENE                     <0.001
  IODOMETHANE                      <0.001
  M-P XYLENE                        <0.001
  METHYL ETHYL KETONE               <0.02
  METHYL ISOBUTYL KETONE            <0.02
  METHYLENE CHLORIDE                <0.001
  O-XYLENE                          <0.001
  STYRENE                          <0.001
  TETRACHLOROETHENE                 <0.001
  TOLUENE                           <0.001
  TOTAL XYLENE                      <0.001
  TRANS-1,2-DICHLOROETHENE          <0.001
  TRANS-1,3-DICHLOROPROPENE         <0.001
  TRICHLOROETHENE                   <0.001
  TRICHLOROFLUOROMETHANE           <0.001
  VINYL ACETATE                     <0.001
  VINYL CHLORIDE                    <0.001
-- SEMI-VOLATILE EXTRACTABLES --
  1,2,3-TRICHLOROPROPANE           <0.001
```

NOTES: All results in mg/L (Water) or mg/kg (Soil) unless noted and are laboratory (LAB) unless field (FLD) or calculated (CALC)TOT:Total; DIS:Dissolved; TRC:Total Recoverable; E:Estimated; <:Less than Detect; Blank: parameter not testedValidation Flags: A:Anomalous; UJ1:Blank; J2,UJ2: Standard; J3:Hold Time; J4,UJ4:Duplicate, Spike or Split Exceedance; R:Rejected

ANALYSES SUMMARY REPORT

CHHL01 - City of Helena

VDM Program

Sample Type:Monitoring Wells

SITE CODE	HL-94-3
SAMPLE DATE	06/10/09
LAB	EL
SAMPLE NUMBER	HL-0906-116
LAB NUMBER	9060177016
REMARKS	
1,2-DIBROMO-3-CHLOROPROPANE	<0.001
1,2-DICHLOROBENZENE	<0.001
1,4-DICHLOROBENZENE	<0.001
TRANS-1,4-DICHLORO-2-BUTENE	<0.001
-- OTHER PARAMETERS --	
CHEMICAL OXYGEN DEMAND	<1 UJ4
CYANIDE (CN) TOT	<0.005

NOTES: All results in mg/L (Water) or mg/kg (Soil) unless noted and are laboratory (LAB) unless field (FLD) or calculated (CALC)TOT:Total; DIS:Dissolved, TRC:Total Recoverable; E:Estimated; <:Less than Detect; Blank: parameter not testedValidation Flags: A:Anomalous; UJ1:Blank; J2,UJ2: Standard; J3:Hold Time; J4,UJ4:Duplicate, Spike or Split Exceedance; R:Rejected

ANALYSES SUMMARY REPORT

CHHL01 - City of Helena

VDM Program

Sample Type: Monitoring Wells

SITE CODE	HL-99-1
SAMPLE DATE	06/11/09
LAB	EL
SAMPLE NUMBER	HL-0906-122
LAB NUMBER	9060204003
REMARKS	

```
-- PHYSICAL PARAMETERS --
  DEPTH TO WATER LEVEL (FEET)      NA @ 71
                                PH      7.3
                                PH (FLD) 7.16
  SC (UMHOS/CM AT 25 C)            1200.0
  SC (UMHOS/CM AT 25 C) (FLD)      1243
  WATER TEMPERATURE (C) (FLD)      11.78

-- MAJOR CONSTITUENTS --
  CHLORIDE (CL)                    74.0
  SULFATE (SO4)                    170.0

-- NUTRIENTS --
  NITRATE + NITRITE AS N            11.1

-- METALS & MINOR CONSTITUENTS --
  ANTIMONY (SB) DIS                 <0.005
  ARSENIC (AS) DIS                 <0.005
  BARIUM (BA) DIS                  <0.1
  BERYLLIUM (BE) DIS               <0.001
  CADMIUM (CD) DIS                 <0.001
  CHROMIUM (CR) DIS                <0.01
  COBALT (CO) DIS                  <0.01
  COPPER (CU) DIS                  <0.01
  IRON (FE) DIS                   <0.03
  LEAD (PB) DIS                   <0.01
  MERCURY (HG) DIS                 <0.001
  NICKEL (NI) DIS                  <0.01
  SELENIUM (SE) DIS                <0.005
  SILVER (AG) DIS                  <0.005
  THALLIUM (TL) DIS                <0.005
  VANADIUM (V) DIS                 <0.1
  ZINC (ZN) DIS                    0.01

-- VOLATILE ORGANICS --
  1,1,1,2-TETRACHLOROETHANE        <0.001
  1,1,1-TRICHLOROETHANE            <0.001
  1,1,2,2-TETRACHLOROETHANE        <0.001
  1,1,2-TRICHLOROETHANE            <0.001
  1,1-DICHLOROETHANE               <0.001
  1,1-DICHLOROETHENE               <0.001
  1,2-DIBROMOETHANE                <0.001
  1,2-DICHLOROETHANE               <0.001
  1,2-DICHLOROPROPANE              <0.001
  2-HEXANONE                       <0.02
  ACETONE                           <0.02
  ACRYLONITRILE                     <0.02
  BENZENE                           <0.001
  BROMOCHLOROMETHANE                <0.001
  BROMODICHLOROMETHANE              <0.001
  BROMOFORM                         <0.001
  BROMOMETHANE                      <0.001
  CARBON DISULFIDE                  <0.001
  CARBON TETRACHLORIDE              <0.001
  CHLOROETHANE                     <0.001
  CHLOROETHANE                     <0.001
  CHLOROETHANE                     0.0028
  CHLOROMETHANE                    <0.001
  CIS-1,2-DICHLOROETHENE            0.0017
  CIS-1,3-DICHLOROPROPENE           <0.001
  DIBROMOMETHANE                   <0.001
  DICHLORODIFLUOROMETHANE           <0.001
  ETHYLBENZENE                     <0.001
  IODOMETHANE                      <0.001
  M-P XYLENE                        <0.001
  METHYL ETHYL KETONE               <0.02
  METHYL ISOBUTYL KETONE            <0.02
  METHYLENE CHLORIDE                <0.001
  O-XYLENE                          <0.001
  STYRENE                           <0.001
  TETRACHLOROETHENE                 0.0037
  TOLUENE                           <0.001
  TOTAL XYLENE                      <0.001
  TRANS-1,2-DICHLOROETHENE           <0.001
  TRANS-1,3-DICHLOROPROPENE          <0.001
  TRICHLOROETHENE                   <0.001
  TRICHLOROFLUOROMETHANE            <0.001
  VINYL ACETATE                     <0.001
  VINYL CHLORIDE                    <0.001

-- SEMI-VOLATILE EXTRACTABLES --
  1,2,3-TRICHLOROPROPANE           <0.001
```

NOTES: All results in mg/L (Water) or mg/kg (Soil) unless noted and are laboratory (LAB) unless field (FLD) or calculated (CALC) TOT: Total; DIS: Dissolved; TRC: Total Recoverable; E: Estimated; <: Less than Detect; Blank: parameter not tested Validation Flags: A: Anomalous; UJ1: Blank; J2, UJ2: Standard; J3: Hold Time; J4, UJ4: Duplicate, Spike or Split Exceedance; R: Rejected

ANALYSES SUMMARY REPORT

CHHL01 - City of Helena

VDM Program

Sample Type:Monitoring Wells

SITE CODE	HL-99-1
SAMPLE DATE	06/11/09
LAB	EL
SAMPLE NUMBER	HL-0906-122
LAB NUMBER	9060204003
REMARKS	
1,2-DIBROMO-3-CHLOROPROPANE	<0.001
1,2-DICHLOROBENZENE	<0.001
1,4-DICHLOROBENZENE	<0.001
TRANS-1,4-DICHLORO-2-BUTENE	<0.001
-- OTHER PARAMETERS --	
CHEMICAL OXYGEN DEMAND	3.0
CYANIDE (CN) TOT	<0.005

NOTES: All results in mg/L (Water) or mg/kg (Soil) unless noted and are laboratory (LAB) unless field (FLD) or calculated (CALC)TOT:Total; DIS:Dissolved, TRC:Total Recoverable; E:Estimated; <:Less than Detect; Blank: parameter not testedValidation Flags: A:Anomalous; UJ1:Blank; J2,UJ2: Standard; J3:Hold Time; J4,UJ4:Duplicate, Spike or Split Exceedance; R:Rejected

ANALYSES SUMMARY REPORT

CHHL01 - City of Helena

VDM Program

Sample Type:Monitoring Wells

SITE CODE	HL-99-2
SAMPLE DATE	06/11/09
LAB	EL
SAMPLE NUMBER	HL-0906-123
LAB NUMBER	9060204004
REMARKS	

```
-- PHYSICAL PARAMETERS --
DEPTH TO WATER LEVEL (FEET)      88.95
PH                                  7.6
PH (FLD)                          7.35
SC (UMHOS/CM AT 25 C)            863.0
SC (UMHOS/CM AT 25 C) (FLD)      859
WATER TEMPERATURE (C) (FLD)     11.9

-- MAJOR CONSTITUENTS --
CHLORIDE (CL)                    41.0
SULFATE (SO4)                   120.0

-- NUTRIENTS --
NITRATE + NITRITE AS N          7.8

-- METALS & MINOR CONSTITUENTS --
ANTIMONY (SB) DIS                <0.005
ARSENIC (AS) DIS                 <0.005
BARIUM (BA) DIS                  <0.1
BERYLLIUM (BE) DIS               <0.001
CADMIUM (CD) DIS                0.002
CHROMIUM (CR) DIS               <0.01
COBALT (CO) DIS                 <0.01
COPPER (CU) DIS                 <0.01
IRON (FE) DIS                   <0.03
LEAD (PB) DIS                   <0.01
MERCURY (HG) DIS                <0.001
NICKEL (NI) DIS                 <0.01
SELENIUM (SE) DIS              0.006
SILVER (AG) DIS                 <0.005
THALLIUM (TL) DIS               <0.005
VANADIUM (V) DIS                <0.1
ZINC (ZN) DIS                   <0.01

-- VOLATILE ORGANICS --
1,1,1,2-TETRACHLOROETHANE        <0.001
1,1,1-TRICHLOROETHANE           <0.001
1,1,2,2-TETRACHLOROETHANE        <0.001
1,1,2-TRICHLOROETHANE           <0.001
1,1-DICHLOROETHANE              0.0014
1,1-DICHLOROETHENE              <0.001
1,2-DIBROMOETHANE               <0.001
1,2-DICHLOROETHANE              <0.001
1,2-DICHLOROPROPANE             <0.001
2-HEXANONE                      <0.02
ACETONE                         <0.02
ACRYLONITRILE                   <0.02
BENZENE                         <0.001
BROMOCHLOROMETHANE              <0.001
BROMODICHLOROMETHANE            <0.001
BROMOFORM                       <0.001
BROMOMETHANE                    <0.001
CARBON DISULFIDE                <0.001
CARBON TETRACHLORIDE            <0.001
CHLOROBENZENE                   <0.001
CHLORODIBROMOMETHANE            <0.001
CHLOROETHANE                    <0.001
CHLOROFORM                      0.0015
CHLOROMETHANE                   <0.001
CIS-1,2-DICHLOROETHENE          <0.001
CIS-1,3-DICHLOROPROPENE         <0.001
DIBROMOMETHANE                  <0.001
DICHLORODIFLUOROMETHANE         0.0013
ETHYLBENZENE                    <0.001
Iodomethane                      <0.001
M-P XYLENE                      <0.001
METHYL ETHYL KETONE              <0.02
METHYL ISOBUTYL KETONE           <0.02
METHYLENE CHLORIDE               <0.001
O-XYLENE                        <0.001
STYRENE                         <0.001
TETRACHLOROETHENE               0.0043
TOLUENE                         <0.001
TOTAL XYLENE                     <0.001
TRANS-1,2-DICHLOROETHENE        <0.001
TRANS-1,3-DICHLOROPROPENE       <0.001
TRICHLOROETHENE                 <0.001
TRICHLOROFLUOROMETHANE          <0.001
VINYL ACETATE                   <0.001
VINYL CHLORIDE                  <0.001

-- SEMI-VOLATILE EXTRACTABLES --
1,2,3-TRICHLOROPROPANE         <0.001
```

NOTES: All results in mg/L (Water) or mg/kg (Soil) unless noted and are laboratory (LAB) unless field (FLD) or calculated (CALC)TOT:Total; DIS:Disolved, TRC:Total Recoverable; E:Estimated; <:Less than Detect; Blank: parameter not testedValidation Flags: A:Anomalous; UJ1:Blank; J2,UJ2: Standard; J3:Hold Time; J4,UJ4:Duplicate, Spike or Split Exceedance; R:Rejected

ANALYSES SUMMARY REPORT

CHHL01 - City of Helena

VDM Program

Sample Type:Monitoring Wells

SITE CODE	HL-99-2
SAMPLE DATE	06/11/09
LAB	EL
SAMPLE NUMBER	HL-0906-123
LAB NUMBER	9060204004
REMARKS	
1,2-DIBROMO-3-CHLOROPROPANE	<0.001
1,2-DICHLOROBENZENE	<0.001
1,4-DICHLOROBENZENE	<0.001
TRANS-1,4-DICHLORO-2-BUTENE	<0.001
-- OTHER PARAMETERS --	
CHEMICAL OXYGEN DEMAND	<1.0
CYANIDE (CN) TOT	0.056

NOTES: All results in mg/L (Water) or mg/kg (Soil) unless noted and are laboratory (LAB) unless field (FLD) or calculated (CALC)TOT:Total; DIS:Disolved, TRC:Total Recoverable; E:Estimated; <:less than Detect; Blank: parameter not testedValidation Flags: A:Anomalous; UJ1:Blank; J2,UJ2: Standard; J3:Hold Time; J4,UJ4:Duplicate, Spike or Split Exceedance; R:Rejected

ANALYSES SUMMARY REPORT

CHHL01 - City of Helena

VDM Program

Sample Type: Monitoring Wells

SITE CODE	HL-99-3
SAMPLE DATE	06/11/09
LAB	EL
SAMPLE NUMBER	HL-0906-124
LAB NUMBER	9060204005
REMARKS	

```
-- PHYSICAL PARAMETERS --
DEPTH TO WATER LEVEL (FEET)      73.22
PH                                 7.4
PH (FLD)                          7.30
SC (UMHOS/CM AT 25 C)            940.0
SC (UMHOS/CM AT 25 C) (FLD)      949
WATER TEMPERATURE (C) (FLD)     11.5

-- MAJOR CONSTITUENTS --
CHLORIDE (CL)                     49.0
SULFATE (SC4)                    170.0

-- NUTRIENTS --
NITRATE + NITRITE AS N           10.7

-- METALS & MINOR CONSTITUENTS --
ANTIMONY (SB) DIS                 <0.005
ARSENIC (AS) DIS                  <0.005
BARIUM (BA) DIS                   <0.1
BERYLLIUM (BE) DIS                <0.001
CADMIUM (CD) DIS                  <0.001
CHROMIUM (CR) DIS                 <0.01
COBALT (CO) DIS                   <0.01
COPPER (CU) DIS                   <0.01
IRON (FE) DIS                     <0.03
LEAD (PB) DIS                     <0.01
MERCURY (HG) DIS                  <0.001
NICKEL (NI) DIS                   <0.01
SELENIUM (SE) DIS                 <0.005
SILVER (AG) DIS                   <0.005
THALLIUM (TL) DIS                 <0.005
VANADIUM (V) DIS                  <0.1
ZINC (ZN) DIS                     <0.01

-- VOLATILE ORGANICS --
1,1,1,2-TETRACHLOROETHANE         <0.001
1,1,1-TRICHLOROETHANE             <0.001
1,1,2,2-TETRACHLOROETHANE         <0.001
1,1,2-TRICHLOROETHANE             <0.001
1,1-DICHLOROETHANE                0.0027
1,1-DICHLOROETHANE                <0.001
1,2-DIBROMOETHANE                 <0.001
1,2-DICHLOROETHANE                <0.001
1,2-DICHLOROPROPANE              <0.001
2-HEXANE                           <0.02
ACETONE                           <0.02
ACRYLONITRILE                     <0.02
BENZENE                            <0.001
BROMOCHLOROMETHANE                <0.001
BROMODICHLOROMETHANE              <0.001
BROMOFORM                          <0.001
BROMOMETHANE                       <0.001
CARBON DISULFIDE                   <0.001
CARBON TETRACHLORIDE              <0.001
CHLOROBENZENE                      <0.001
CHLORODIBROMOMETHANE              <0.001
CHLOROETHANE                       <0.001
CHLOROFORM                         0.0023
CHLOROMETHANE                     <0.001
CIS-1,2-DICHLOROETHENE             <0.001
CIS-1,3-DICHLOROPROPENE           <0.001
DIBROMOMETHANE                     <0.001
DICHLORODIFLUOROMETHANE           0.0021
ETHYLBENZENE                       <0.001
Iodomethane                        <0.001
M-P XYLENE                         <0.001
METHYL ETHYL KETONE                <0.02
METHYL ISOBUTYL KETONE             <0.02
METHYLENE CHLORIDE                 <0.001
O-XYLENE                           <0.001
STYRENE                           <0.001
TETRACHLOROETHENE                  0.0074
TOLUENE                            <0.001
TOTAL XYLENE                       <0.001
TRANS-1,2-DICHLOROETHENE           <0.001
TRANS-1,3-DICHLOROPROPENE         <0.001
TRICHLOROETHENE                    0.0014
TRICHLOROFUOROMETHANE              <0.001
VINYL ACETATE                      <0.001
VINYL CHLORIDE                     <0.001

-- SEMI-VOLATILE EXTRACTABLES --
1,2,3-TRICHLOROPROPANE            <0.001
```

NOTES: All results in mg/L (Water) or mg/kg (Soil) unless noted and are laboratory (LAB) unless field (FLD) or calculated (CALC) TOT: Total; DIS: Dissolved; TRC: Total Recoverable; E: Estimated; <: Less than Detect; Blank: parameter not tested Validation Flags: A: Anomalous; UJ1: Blank; J2, UJ2: Standard; J3: Hold Time; J4, UJ4: Duplicate, Spike or Split Exceedance; R: Rejected

ANALYSES SUMMARY REPORT

CHHL01 - City of Helena

VDM Program

Sample Type:Monitoring Wells

SITE CODE	HL-99-5
SAMPLE DATE	06/11/09
LAB	EL
SAMPLE NUMBER	HL-0906-124
LAB NUMBER	9060204005
REMARKS	
1,2-DIBROMO-3-CHLOROPROPANE	<0.001
1,2-DICHLOROBENZENE	<0.001
1,4-DICHLOROBENZENE	<0.001
TRANS-1,4-DICHLORO-2-BUTENE	<0.001
-- OTHER PARAMETERS --	
CHEMICAL OXYGEN DEMAND	<1.0
CYANIDE (CN) TOT	0.036

NOTES: All results in mg/L (Water) or mg/kg (Soil) unless noted and are laboratory (LAB) unless field (FLD) or calculated (CALC)TOT:Total; DIS:Disolved, TRC:Total Recoverable; E:Estimated; <:Less than Detect; Blank: parameter not testedValidation Flags: A:Anomalous; UJ1:Blank; J2,UJ2: Standard; J3:Hold Time; J4,UJ4:Duplicate, Spike or Split Exceedance; R:Rejected

ANALYSES SUMMARY REPORT

CHHL01 - City of Helena

VDM Program

Sample Type:Monitoring Wells

SITE CODE	I-4
SAMPLE DATE	06/09/09
LAB	EL
SAMPLE NUMBER	HL-0906-106
LAB NUMBER	9060177009
REMARKS	

-- PHYSICAL PARAMETERS --

PH (FLD)	7.37
SC (UMHOS/CM AT 25 C) (FLD)	1088
WATER TEMPERATURE (C) (FLD)	10.9

-- VOLATILE ORGANICS --

1,1,1,2-TETRACHLOROETHANE	<0.001
1,1,1-TRICHLOROETHANE	<0.001
1,1,2,2-TETRACHLOROETHANE	<0.001
1,1,2-TRICHLOROETHANE	<0.001
1,1-DICHLOROETHANE	0.0028
1,1-DICHLOROETHENE	<0.001
1,2-DIBROMOETHANE	<0.001
1,2-DICHLOROETHANE	<0.001
1,2-DICHLOROPROPANE	<0.001
2-HEXANONE	<0.02
ACETONE	<0.02
ACRYLONITRILE	<0.02
BENZENE	<0.001
BROMOCHLOROMETHANE	<0.001
BROMODICHLOROMETHANE	<0.001
BROMOFORM	<0.001
BROMOMETHANE	<0.001
CARBON DISULFIDE	<0.001
CARBON TETRACHLORIDE	<0.001
CHLOROBENZENE	<0.001
CHLORODIBROMOMETHANE	<0.001
CHLOROETHANE	<0.001
CHLOROFORM	0.0019
CHLOROMETHANE	<0.001
CIS-1,2-DICHLOROETHENE	0.0013
CIS-1,3-DICHLOROPROPENE	<0.001
DIBROMOMETHANE	<0.001
DICHLORODIFLUOROMETHANE	0.0025
ETHYLBENZENE	<0.001
IODOMETHANE	<0.001
M-P XYLENE	<0.001
METHYL ETHYL KETONE	<0.02
METHYL ISOBUTYL KETONE	<0.02
METHYLENE CHLORIDE	<0.001
O-XYLENE	<0.001
STYRENE	<0.001
TETRACHLOROETHENE	0.0089
TOLUENE	<0.001
TOTAL XYLENE	<0.001
TRANS-1,2-DICHLOROETHENE	<0.001
TRANS-1,3-DICHLOROPROPENE	<0.001
TRICHLOROETHENE	0.0019
TRICHLOROFLUOROMETHANE	<0.001
VINYL ACETATE	<0.001
VINYL CHLORIDE	<0.001

-- SEMI-VOLATILE EXTRACTABLES --

1,2,3-TRICHLOROPROPANE	<0.001
1,2-DIBROMO-3-CHLOROPROPANE	<0.001
1,2-DICHLOROBENZENE	<0.001
1,4-DICHLOROBENZENE	<0.001
TRANS-1,4-DICHLORO-2-BUTENE	<0.001

NOTES: All results in mg/L (Water) or mg/kg (Soil) unless noted and are laboratory (LAB) unless field (FLD) or calculated (CALC)TOT:Total; DIS:Disolved; TRC:Total Recoverable; E:Estimated; <:Less than Detect; Blank: parameter not testedValidation Flags: A:Anomalous; UJ1:Blank; J2,UJ2: Standard; J3:Hold Time; J4,UJ4:Duplicate, Spike or Split Exceedance; R:Rejected

ANALYSES SUMMARY REPORT

CHHL01 - City of Helena

VDM Program

Sample Type:Monitoring Wells

SITE CODE	MPC-1
SAMPLE DATE	06/10/09
LAB	EL
SAMPLE NUMBER	HL-0906-116
LAB NUMBER	9060177017
REMARKS	

```
-- PHYSICAL PARAMETERS --
DEPTH TO WATER LEVEL (FEET)      24.85
PH                                 7.4
PH (FLD)                          7.20
SC (UMHOS/CM AT 25 C)            1080
SC (UMHOS/CM AT 25 C) (FLD)      1066
WATER TEMPERATURE (C) (FLD)      9.6

-- MAJOR CONSTITUENTS --
CHLORIDE (CL)                     57
SULFATE (SO4)                     200

-- NUTRIENTS --
NITRATE + NITRITE AS N            13.1

-- METALS & MINOR CONSTITUENTS --
ANTIMONY (SB) DIS                  <0.005
ARSENIC (AS) DIS                   <0.005
BARIUM (BA) DIS                    <0.1
BERYLLIUM (BE) DIS                 <0.001
CADMIUM (CD) DIS                   <0.001
CHROMIUM (CR) DIS                  <0.01
COBALT (CO) DIS                    <0.01
COPPER (CU) DIS                    <0.01
IRON (FE) DIS                      <0.03
LEAD (PB) DIS                      <0.01
MERCURY (HG) DIS                   <0.001
NICKEL (NI) DIS                    <0.01
SELENIUM (SE) DIS                  <0.005
SILVER (AG) DIS                    <0.005
THALLIUM (TL) DIS                  <0.005
VANADIUM (V) DIS                   <0.1
ZINC (ZN) DIS                      <0.01

-- VOLATILE ORGANICS --
1,1,1,2-TETRACHLOROETHANE          <0.001
1,1,1-TRICHLOROETHANE              <0.001
1,1,2,2-TETRACHLOROETHANE          <0.001
1,1,2-TRICHLOROETHANE              <0.001
1,1-DICHLOROETHANE                 0.0023
1,1-DICHLOROETHENE                 <0.001
1,2-DIBROMOETHANE                  <0.001
1,2-DICHLOROETHANE                 <0.001
1,2-DICHLOROPROPANE                <0.001
2-HEXANONE                         <0.02
ACETONE                            <0.02
ACRYLONITRILE                      <0.02
BENZENE                             <0.001
BROMOCHLOROMETHANE                 <0.001
BROMODICHLOROMETHANE               <0.001
BROMOFORM                           <0.001
BROMOMETHANE                       <0.001
CARBON DISULFIDE                    <0.001
CARBON TETRACHLORIDE                <0.001
CHLOROBENZENE                       <0.001
CHLORODIBROMOMETHANE                <0.001
CHLOROETHANE                       <0.001
CHLOROFORM                          0.002
CHLOROMETHANE                       <0.001
CIS-1,2-DICHLOROETHENE              0.0014
CIS-1,3-DICHLOROPROPENE             <0.001
DIBROMOMETHANE                      <0.001
DICHLORODIFLUOROMETHANE             <0.001
ETHYLBENZENE                        <0.001
Iodomethane                         <0.001
M-P XYLENE                          <0.001
METHYL ETHYL KETONE                 <0.02
METHYL ISOBUTYL KETONE              <0.02
METHYLENE CHLORIDE                  <0.001
O-XYLENE                            <0.001
STYRENE                             <0.001
TETRACHLOROETHENE                  0.012
TOLUENE                             <0.001
TOTAL XYLENE                        <0.001
TRANS-1,2-DICHLOROETHENE             <0.001
TRANS-1,3-DICHLOROPROPENE           <0.001
TRICHLOROETHENE                     0.0022
TRICHLOROFLUOROMETHANE              0.0011
VINYL ACETATE                       <0.001
VINYL CHLORIDE                      <0.001

-- SEMI-VOLATILE EXTRACTABLES --
1,2,3-TRICHLOROPROPANE             <0.001
```

NOTES: All results in mg/L (Water) or mg/kg (Soil) unless noted and are laboratory (LAB) unless field (FLD) or calculated (CALC)TOT:Total; DIS:Disolved, TRC:Total Recoverable; E:Estimated; <:Less than Detect; Blank: parameter not testedValidation Flags: A:Anomalous; UJ1:Blank; J2,UJ2: Standard; J3:Hold Time; J4,UJ4:Duplicate, Spike or Split Exceedance; R:Rejected

ANALYSES SUMMARY REPORT

CHHL01 - City of Helena

VDM Program

Sample Type:Monitoring Wells

SITE CODE	MPC-1
SAMPLE DATE	06/10/09
LAB	EL
SAMPLE NUMBER	HL-0906-118
LAB NUMBER	9060177017
REMARKS	
1,2-DIBROMO-3-CHLOROPROPANE	<0.001
1,2-DICHLOROBENZENE	<0.001
1,4-DICHLOROBENZENE	<0.001
TRANS-1,4-DICHLORO-2-BUTENE	<0.001
-- OTHER PARAMETERS --	
CHEMICAL OXYGEN DEMAND	2 J4D
CYANIDE (CN) TOT	0.04

NOTES: All results in mg/L (Water) or mg/kg (Soil) unless noted and are laboratory (LAB) unless field (FLD) or calculated (CALC) TOT:Total; DIS:Dissolved; TRC:Total Recoverable; E:Estimated; <:Less than Detect; Blank: parameter not tested Validation Flags: A:Anomalous; UJ1:Blank; J2,UJ2: Standard; J3:Hold Time; J4,UJ4:Duplicate, Spike or Split Exceedance; R:Rejected

ANALYSES SUMMARY REPORT

CHHL01 - City of Helena

VDM Program

Sample Type: Monitoring Wells

SITE CODE MPC-2
 SAMPLE DATE 06/09/09
 LAB EL
 SAMPLE NUMBER HL-0906-101
 LAB NUMBER 9060177002
 REMARKS

-- PHYSICAL PARAMETERS --

DEPTH TO WATER LEVEL (FEET) 18.76
 PH (FLD) 7.04
 SC (UMHOS/CM AT 25 C) (FLD) 944
 WATER TEMPERATURE (C) (FLD) 9.6

-- VOLATILE ORGANICS --

1,1,1,2-TETRACHLOROETHANE <0.001
 1,1,1-TRICHLOROETHANE <0.001
 1,1,2,2-TETRACHLOROETHANE <0.001
 1,1,2-TRICHLOROETHANE <0.001
 1,1-DICHLOROETHANE <0.001
 1,1-DICHLOROETHENE <0.001
 1,2-DIBROMOETHANE <0.001
 1,2-DICHLOROETHANE <0.001
 1,2-DICHLOROPROPANE <0.001
 2-HEXANONE <0.02
 ACETONE <0.02
 ACRYLONITRILE <0.02
 BENZENE <0.001
 BROMOCHLOROMETHANE <0.001
 BROMODICHLOROMETHANE <0.001
 BROMOFORM <0.001
 BROMOMETHANE <0.001
 CARBON DISULFIDE <0.001
 CARBON TETRACHLORIDE <0.001
 CHLOROBENZENE <0.001
 CHLORODIBROMOMETHANE <0.001
 CHLOROETHANE <0.001
 CHLOROFORM <0.001
 CHLOROMETHANE <0.001
 CIS-1,2-DICHLOROETHENE <0.001
 CIS-1,3-DICHLOROPROPENE <0.001
 DIBROMOMETHANE <0.001
 DICHLORODIFLUOROMETHANE <0.001
 ETHYLBENZENE <0.001
 IODOMETHANE <0.001
 M-P XYLENE <0.001
 METHYL ETHYL KETONE <0.02
 METHYL ISOBUTYL KETONE <0.02
 METHYLENE CHLORIDE <0.001
 O-XYLENE <0.001
 STYRENE <0.001
 TETRACHLOROETHENE <0.001
 TOLUENE <0.001
 TOTAL XYLENE <0.001
 TRANS-1,2-DICHLOROETHENE <0.001
 TRANS-1,3-DICHLOROPROPENE <0.001
 TRICHLOROETHENE <0.001
 TRICHLOROFLUOROMETHANE <0.001
 VINYL ACETATE <0.001
 VINYL CHLORIDE <0.001

-- SEMI-VOLATILE EXTRACTABLES --

1,2,3-TRICHLOROPROPANE <0.001
 1,2-DIBROMO-3-CHLOROPROPANE <0.001
 1,2-DICHLOROBENZENE <0.001
 1,4-DICHLOROBENZENE <0.001
 TRANS-1,4-DICHLORO-2-BUTENE <0.001

NOTES: All results in mg/L (Water) or mg/kg (Soil) unless noted and are laboratory (LAB) unless field (FLD) or calculated (CALC); TOT: Total; DIS: Dissolved; TRC: Total Recoverable; E: Estimated; <: Less than Detect; Blank: parameter not tested; Validation Flags: A: Anomalous; UJ1: Blank; J2, UJ2: Standard; J3: Hold Time; J4, UJ4: Duplicate, Spike or Split Exceedance; R: Rejected

ANALYSES SUMMARY REPORT

CHHL01 - City of Helena

VDM Program

Sample Type:Monitoring Wells

SITE CODE	MPC-5
SAMPLE DATE	06/11/09
LAB	EL
SAMPLE NUMBER	HL-0906-121
LAB NUMBER	9060204002
REMARKS	

-- PHYSICAL PARAMETERS --

DEPTH TO WATER LEVEL (FEET)	54.26
PH	7.4
PH (FLD)	6.98
SC (UMHOS/CM AT 25 C)	2800.0
SC (UMHOS/CM AT 25 C) (FLD)	2769
WATER TEMPERATURE (C) (FLD)	12.1

-- MAJOR CONSTITUENTS --

CHLORIDE (CL)	29.0
SULFATE (SO4)	890.0

-- NUTRIENTS --

NITRATE + NITRITE AS N	32.8
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-- METALS & MINOR CONSTITUENTS --

ANTIMONY (SB) DIS	<0.005
ARSENIC (AS) DIS	0.006
BARIUM (BA) DIS	<0.1
BERYLLIUM (BE) DIS	<0.001
CADMIUM (CD) DIS	0.001
CHROMIUM (CR) DIS	<0.01
COBALT (CO) DIS	<0.01
COPPER (CU) DIS	<0.01
IRON (FE) DIS	1.02
LEAD (PB) DIS	<0.01
MERCURY (HG) DIS	<0.001
NICKEL (NI) DIS	0.01
SELENIUM (SE) DIS	0.01
SILVER (AG) DIS	<0.005
THALLIUM (TL) DIS	<0.005
VANADIUM (V) DIS	<0.1
ZINC (ZN) DIS	<0.01

-- VOLATILE ORGANICS --

1,1,1,2-TETRACHLOROETHANE	<0.001
1,1,1-TRICHLOROETHANE	<0.001
1,1,2,2-TETRACHLOROETHANE	<0.001
1,1,2-TRICHLOROETHANE	<0.001
1,1-DICHLOROETHANE	<0.001
1,1-DICHLOROETHENE	<0.001
1,2-DIBROMOETHANE	<0.001
1,2-DICHLOROETHANE	<0.001
1,2-DICHLOROPROPANE	<0.001
2-HEXANONE	<0.02
ACETONE	<0.02
ACRYLONITRILE	<0.02
BENZENE	0.0053
BROMOCHLOROMETHANE	<0.001
BROMODICHLOROMETHANE	<0.001
BROMOFORM	<0.001
BROMOMETHANE	<0.001
CARBON DISULFIDE	<0.001
CARBON TETRACHLORIDE	<0.001
CHLOROBENZENE	<0.001
CHLORODIBROMOMETHANE	<0.001
CHLOROETHANE	<0.001
CHLOROFORM	<0.001
CHLOROMETHANE	<0.001
CIS-1,2-DICHLOROETHENE	<0.001
CIS-1,3-DICHLOROPROPENE	<0.001
DIBROMOMETHANE	<0.001
DICHLORODIFLUOROMETHANE	<0.001
ETHYLBENZENE	<0.001
IODOMETHANE	<0.001
M-P XYLENE	0.0035
METHYL ETHYL KETONE	<0.02
METHYL ISOBUTYL KETONE	<0.02
METHYLENE CHLORIDE	<0.001
O-XYLENE	0.0044
STYRENE	<0.001
TETRACHLOROETHENE	<0.001
TOLUENE	<0.001
TOTAL XYLENE	0.0079
TRANS-1,2-DICHLOROETHENE	<0.001
TRANS-1,3-DICHLOROPROPENE	<0.001
TRICHLOROETHENE	<0.001
TRICHLOROFUOROMETHANE	<0.001
VINYL ACETATE	<0.001
VINYL CHLORIDE	<0.001

-- SEMI-VOLATILE EXTRACTABLES --

1,2,3-TRICHLOROPROPANE	<0.001
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NOTES: All results in mg/L (Water) or mg/kg (Soil) unless noted and are laboratory (LAB) unless field (FLD) or calculated (CALC) TOT:Total; DIS:Disolved, TRC:Total Recoverable; E:Estimated; <:Less than Detect; Blank: parameter not tested Validation Flags: A:Anomalous; UJ1:Blank; J2,UJ2: Standard; J3:Hold Time; J4,UJ4:Duplicate, Spike or Split Exceedance; R:Rejected

ANALYSES SUMMARY REPORT

CHHL01 - City of Helena

VDM Program

Sample Type:Monitoring Wells

SITE CODE	MPC-5
SAMPLE DATE	06/11/09
LAB	EL
SAMPLE NUMBER	HL-0906-121
LAB NUMBER	9060204002
REMARKS	
1,2-DIBROMO-3-CHLOROPROPANE	<0.001
1,2-DICHLOROBENZENE	<0.001
1,4-DICHLOROBENZENE	<0.001
TRANS-1,4-DICHLORO-2-BUTENE	<0.001
-- OTHER PARAMETERS --	
CHEMICAL OXYGEN DEMAND	36.0
CYANIDE (CN) TOT	4.05

NOTES: All results in mg/L (Water) or mg/kg (Soil) unless noted and are laboratory (LAB) unless field (FLD) or calculated (CALC)TOT:Total; DIS:Dissolved, TRC:Total Recoverable; E:Estimated; <:Less than Detect; Blank: parameter not testedValidation Flags: A:Anomalous; UJ1:Blank; J2,UJ2: Standard; J3:Hold Time; J4,UJ4:Duplicate, Spike or Split Exceedance; R:Rejected

ANALYSES SUMMARY REPORT

CHHL01 - City of Helena

VDM Program

Sample Type: Private Well

SITE CODE	5
SAMPLE DATE	06/09/09
LAB	EL
SAMPLE NUMBER	HL-0906-103
LAB NUMBER	9060177004
REMARKS	

-- PHYSICAL PARAMETERS --

PH (FLD)	7.71
SC (UMHOS/CM AT 25 C) (FLD)	1185
WATER TEMPERATURE (C) (FLD)	10.9

-- VOLATILE ORGANICS --

1,1,1,2-TETRACHLOROETHANE	<0.001
1,1,1-TRICHLOROETHANE	<0.001
1,1,2,2-TETRACHLOROETHANE	<0.001
1,1,2-TRICHLOROETHANE	<0.001
1,1-DICHLOROETHANE	<0.001
1,1-DICHLOROETHENE	<0.001
1,2-DIBROMOETHANE	<0.001
1,2-DICHLOROETHANE	<0.001
1,2-DICHLOROPROPANE	<0.001
2-HEXANONE	<0.02
ACETONE	<0.02
ACRYLONITRILE	<0.02
BENZENE	<0.001
BROMOCHLOROMETHANE	<0.001
BROMODICHLOROMETHANE	<0.001
BROMOFORM	<0.001
BROMOMETHANE	<0.001
CARBON DISULFIDE	<0.001
CARBON TETRACHLORIDE	<0.001
CHLOROBENZENE	<0.001
CHLORODIBROMOMETHANE	<0.001
CHLOROETHANE	<0.001
CHLOROFORM	0.0024
CHLOROMETHANE	<0.001
CIS-1,2-DICHLOROETHENE	<0.001
CIS-1,3-DICHLOROPROPENE	<0.001
DIBROMOMETHANE	<0.001
DICHLORODIFLUOROMETHANE	<0.001
ETHYLBENZENE	<0.001
IODOMETHANE	<0.001
M-P XYLENE	<0.001
METHYL ETHYL KETONE	<0.02
METHYL ISOBUTYL KETONE	<0.02
METHYLENE CHLORIDE	<0.001
O-XYLENE	<0.001
STYRENE	<0.001
TETRACHLOROETHENE	0.0036
TOLUENE	<0.001
TOTAL XYLENE	<0.001
TRANS-1,2-DICHLOROETHENE	<0.001
TRANS-1,3-DICHLOROPROPENE	<0.001
TRICHLOROETHENE	<0.001
TRICHLOROFLUOROMETHANE	<0.001
VINYL ACETATE	<0.001
VINYL CHLORIDE	<0.001

-- SEMI-VOLATILE EXTRACTABLES --

1,2,3-TRICHLOROPROPANE	<0.001
1,2-DIBROMO-3-CHLOROPROPANE	<0.001
1,2-DICHLOROBENZENE	<0.001
1,4-DICHLOROBENZENE	<0.001
TRANS-1,4-DICHLORO-2-BUTENE	<0.001

NOTES: All results in mg/L (Water) or mg/kg (Soil) unless noted and are laboratory (LAB) unless field (FLD) or calculated (CALC) TOT: Total; DIS: Dissolved; TRC: Total Recoverable; E: Estimated; <: Less than Detect; Blank: parameter not tested Validation Flags: A: Anomalous; UJ1: Blank; J2, UJ2: Standard; J3: Hold Time; J4, UJ4: Duplicate, Spike or Split Exceedance; R: Rejected

ANALYSES SUMMARY REPORT

CHHL01 - City of Helena

VDM Program

Sample Type: Private Well

SITE CODE	16
SAMPLE DATE	06/09/09
LAB	EL
SAMPLE NUMBER	HL-0906-102
LAB NUMBER	9060177003
REMARKS	

-- PHYSICAL PARAMETERS --

PH (FLD)	7.55
SC (UMHOS/CM AT 25 C) (FLD)	1117
WATER TEMPERATURE (C) (FLD)	11.0

-- VOLATILE ORGANICS --

1,1,1,2-TETRACHLOROETHANE	<0.001
1,1,1-TRICHLOROETHANE	<0.001
1,1,2,2-TETRACHLOROETHANE	<0.001
1,1,2-TRICHLOROETHANE	<0.001
1,1-DICHLOROETHANE	<0.001
1,1-DICHLOROETHENE	<0.001
1,2-DIBROMOETHANE	<0.001
1,2-DICHLOROETHANE	<0.001
1,2-DICHLOROPROPANE	<0.001
2-HEXANONE	<0.02
ACETONE	<0.02
ACRYLONITRILE	<0.02
BENZENE	<0.001
BROMOCHLOROMETHANE	<0.001
BROMODICHLOROMETHANE	<0.001
BROMOFORM	<0.001
BROMOMETHANE	<0.001
CARBON DISULFIDE	<0.001
CARBON TETRACHLORIDE	<0.001
CHLOROBENZENE	<0.001
CHLORODIBROMOMETHANE	<0.001
CHLOROETHANE	<0.001
CHLOROFORM	0.0014
CHLOROMETHANE	<0.001
CIS-1,2-DICHLOROETHENE	<0.001
CIS-1,3-DICHLOROPROPENE	<0.001
DIBROMOMETHANE	<0.001
DICHLORODIFLUOROMETHANE	<0.001
ETHYLBENZENE	<0.001
IODOMETHANE	<0.001
M-P XYLENE	<0.001
METHYL ETHYL KETONE	<0.02
METHYL ISOBUTYL KETONE	<0.02
METHYLENE CHLORIDE	<0.001
O-XYLENE	<0.001
STYRENE	<0.001
TETRACHLOROETHENE	0.0015
TOLUENE	<0.001
TOTAL XYLENE	<0.001
TRANS-1,2-DICHLOROETHENE	<0.001
TRANS-1,3-DICHLOROPROPENE	<0.001
TRICHLOROETHENE	<0.001
TRICHLOROFLUOROMETHANE	<0.001
VINYL ACETATE	<0.001
VINYL CHLORIDE	<0.001

-- SEMI-VOLATILE EXTRACTABLES --

1,2,3-TRICHLOROPROPANE	<0.001
1,2-DIBROMO-3-CHLOROPROPANE	<0.001
1,2-DICHLOROBENZENE	<0.001
1,4-DICHLOROBENZENE	<0.001
TRANS-1,4-DICHLORO-2-BUTENE	<0.001

NOTES: All results in mg/L (Water) or mg/kg (Soil) unless noted and are laboratory (LAB) unless field (FLD) or calculated (CALC) TOT: Total; DIS: Dissolved; TRC: Total Recoverable; E: Estimated; <: Less than Detect; Blank: parameter not tested Validation Flags: A: Anomalous; UJ1: Blank; J2, UJ2: Standard; J3: Hold Time; J4, UJ4: Duplicate, Spike or Split Exceedance; R: Rejected

ANALYSES SUMMARY REPORT

CHHL01 - City of Helena

VDM Program

Sample Type: Private Well

SITE CODE	40
SAMPLE DATE	06/09/09
LAB	EL
SAMPLE NUMBER	HL-0906-104
LAB NUMBER	9060177005
REMARKS	

-- PHYSICAL PARAMETERS --

PH (FLD)	7.63
SC (UMHOS/CM AT 25 C) (FLD)	1144
WATER TEMPERATURE (C) (FLD)	11.3

-- VOLATILE ORGANICS --

1,1,1,2-TETRACHLOROETHANE	<0.001
1,1,1-TRICHLOROETHANE	<0.001
1,1,2,2-TETRACHLOROETHANE	<0.001
1,1,2-TRICHLOROETHANE	<0.001
1,1-DICHLOROETHANE	<0.001
1,1-DICHLOROETHENE	<0.001
1,2-DIBROMOETHANE	<0.001
1,2-DICHLOROETHANE	<0.001
1,2-DICHLOROPROPANE	<0.001
2-HEXANONE	<0.02
ACETONE	<0.02
ACRYLONITRILE	<0.02
BENZENE	<0.001
BROMOCHLOROMETHANE	<0.001
BROMODICHLOROMETHANE	<0.001
BROMOFORM	<0.001
BROMOMETHANE	<0.001
CARBON DISULFIDE	<0.001
CARBON TETRACHLORIDE	<0.001
CHLOROBENZENE	<0.001
CHLORODIBROMOMETHANE	<0.001
CHLOROETHANE	<0.001
CHLOROFORM	0.0038
CHLOROMETHANE	<0.001
CIS-1,2-DICHLOROETHENE	<0.001
CIS-1,3-DICHLOROPROPENE	<0.001
DIBROMOMETHANE	<0.001
DICHLORODIFLUOROMETHANE	<0.001
ETHYLBENZENE	<0.001
Iodomethane	<0.001
M-P XYLENE	<0.001
METHYL ETHYL KETONE	<0.02
METHYL ISOBUTYL KETONE	<0.02
METHYLENE CHLORIDE	<0.001
O-XYLENE	<0.001
STYRENE	<0.001
TETRACHLOROETHENE	0.0026
TOLUENE	<0.001
TOTAL XYLENE	<0.001
TRANS-1,2-DICHLOROETHENE	<0.001
TRANS-1,3-DICHLOROPROPENE	<0.001
TRICHLOROETHENE	<0.001
TRICHLOROFLUOROMETHANE	<0.001
VINYL ACETATE	<0.001
VINYL CHLORIDE	<0.001

-- SEMI-VOLATILE EXTRACTABLES --

1,2,3-TRICHLOROPROPANE	<0.001
1,2-DIBROMO-3-CHLOROPROPANE	<0.001
1,2-DICHLOROBENZENE	<0.001
1,4-DICHLOROBENZENE	<0.001
TRANS-1,4-DICHLORO-2-BUTENE	<0.001

NOTES: All results in mg/L (Water) or mg/kg (Soil) unless noted and are laboratory (LAB) unless field (FLD) or calculated (CALC) TOT: Total; DIS: Dissolved; TRC: Total Recoverable; E: Estimated; <: Less than Detect; Blank: parameter not tested Validation Flags: A: Anomalous; UJ1: Blank; J2, UJ2: Standard; J3: Hold Time; J4, UJ4: Duplicate, Spike or Split Exceedance; R: Rejected

ANALYSES SUMMARY REPORT

CHHL01 - City of Helena

VDM Program

Sample Type: Private Well

SITE CODE 48
 SAMPLE DATE 06/09/09
 LAB EL
 SAMPLE NUMBER HL-0906-107
 LAB NUMBER 9060177008
 REMARKS

-- PHYSICAL PARAMETERS --

PH (FLD) 7.61
 SC (UMHOS/CM AT 25 C) (FLD) 1238
 WATER TEMPERATURE (C) (FLD) 11.1

-- VOLATILE ORGANICS --

1,1,1,2-TETRACHLOROETHANE <0.001
 1,1,1-TRICHLOROETHANE <0.001
 1,1,2,2-TETRACHLOROETHANE <0.001
 1,1,2-TRICHLOROETHANE <0.001
 1,1-DICHLOROETHANE <0.001
 1,1-DICHLOROETHENE <0.001
 1,2-DIBROMOETHANE <0.001
 1,2-DICHLOROETHANE <0.001
 1,2-DICHLOROPROPANE <0.001
 2-HEXANONE <0.02
 ACETONE <0.02
 ACRYLONITRILE <0.02
 BENZENE <0.001
 BROMOCHLOROMETHANE <0.001
 BROMODICHLOROMETHANE <0.001
 BROMOFORM <0.001
 BROMOMETHANE <0.001
 CARBON DISULFIDE <0.001
 CARBON TETRACHLORIDE <0.001
 CHLOROBENZENE <0.001
 CHLORODIBROMOMETHANE <0.001
 CHLOROETHANE <0.001
 CHLOROFORM 0.0031
 CHLOROMETHANE <0.001
 CIS-1,2-DICHLOROETHENE <0.001
 CIS-1,3-DICHLOROPROPENE <0.001
 DIBROMOMETHANE <0.001
 DICHLORODIFLUOROMETHANE <0.001
 ETHYLBENZENE <0.001
 IODOMETHANE <0.001
 M-P XYLENE <0.001
 METHYL ETHYL KETONE <0.02
 METHYL ISOBUTYL KETONE <0.02
 METHYLENE CHLORIDE <0.001
 O-XYLENE <0.001
 STYRENE <0.001
 TETRACHLOROETHANE 0.0023
 TOLUENE <0.001
 TOTAL XYLENE <0.001
 TRANS-1,2-DICHLOROETHENE <0.001
 TRANS-1,3-DICHLOROPROPENE <0.001
 TRICHLOROETHENE <0.001
 TRICHLOROFLUOROMETHANE <0.001
 VINYL ACETATE <0.001
 VINYL CHLORIDE <0.001

-- SEMI-VOLATILE EXTRACTABLES --

1,2,3-TRICHLOROPROPANE <0.001
 1,2-DIBROMO-3-CHLOROPROPANE <0.001
 1,2-DICHLOROBENZENE <0.001
 1,4-DICHLOROBENZENE <0.001
 TRANS-1,4-DICHLORO-2-BUTENE <0.001

NOTES: All results in mg/L (Water) or mg/kg (Soil) unless noted and are laboratory (LAB) unless field (FLD) or calculated (CALC) TOT: Total; DIS: Dissolved; TRC: Total Recoverable; E: Estimated; <: Less than Detect; Blank: parameter not tested Validation Flags: A: Anomalous; UJ1: Blank; J2, UJ2: Standard; J3: Hold Time; J4, UJ4: Duplicate, Spike or Split Exceedance; R: Rejected

ANALYSES SUMMARY REPORT

CHHL01 - City of Helena

VDM Program

Sample Type: Private Well

SITE CODE	52
SAMPLE DATE	06/09/09
LAB	EL
SAMPLE NUMBER	HL-0906-106
LAB NUMBER	9060177007
REMARKS	

-- PHYSICAL PARAMETERS --

FH (FLD)	7.66
SC (UMHOS/CM AT 25 C) (FLD)	1206
WATER TEMPERATURE (C) (FLD)	11.5

-- VOLATILE ORGANICS --

1,1,1,2-TETRACHLOROETHANE	<0.001
1,1,1-TRICHLOROETHANE	<0.001
1,1,2,2-TETRACHLOROETHANE	<0.001
1,1,2-TRICHLOROETHANE	<0.001
1,1-DICHLOROETHANE	<0.001
1,1-DICHLOROETHENE	<0.001
1,2-DIBROMOETHANE	<0.001
1,2-DICHLOROETHANE	<0.001
1,2-DICHLOROPROPANE	<0.001
2-HEXANONE	<0.02
ACETONE	<0.02
ACRYLONITRILE	<0.02
BENZENE	<0.001
BROMOCHLOROMETHANE	<0.001
BROMODICHLOROMETHANE	<0.001
BROMOFORM	<0.001
BROMOMETHANE	<0.001
CARBON DISULFIDE	<0.001
CARBON TETRACHLORIDE	<0.001
CHLOROBENZENE	<0.001
CHLORODIBROMOMETHANE	<0.001
CHLOROETHANE	<0.001
CHLOROFORM	0.0035
CHLOROMETHANE	<0.001
CIS-1,2-DICHLOROETHENE	<0.001
CIS-1,3-DICHLOROPROPENE	<0.001
DIBROMOMETHANE	<0.001
DICHLORODIFLUOROMETHANE	<0.001
ETHYLBENZENE	<0.001
IODOMETHANE	<0.001
M-P XYLENE	<0.001
METHYL ETHYL KETONE	<0.02
METHYL ISOBUTYL KETONE	<0.02
METHYLENE CHLORIDE	<0.001
O-XYLENE	<0.001
STYRENE	<0.001
TETRACHLOROETHENE	0.0022
TOLUENE	<0.001
TOTAL XYLENE	<0.001
TRANS-1,2-DICHLOROETHENE	<0.001
TRANS-1,3-DICHLOROPROPENE	<0.001
TRICHLOROETHENE	<0.001
TRICHLOROFLUOROMETHANE	<0.001
VINYL ACETATE	<0.001
VINYL CHLORIDE	<0.001

-- SEMI-VOLATILE EXTRACTABLES --

1,2,3-TRICHLOROPROPANE	<0.001
1,2-DIBROMO-3-CHLOROPROPANE	<0.001
1,2-DICHLOROBENZENE	<0.001
1,4-DICHLOROBENZENE	<0.001
TRANS-1,4-DICHLORO-2-BUTENE	<0.001

NOTES: All results in mg/L (Water) or mg/kg (Soil) unless noted and are laboratory (LAB) unless field (FLD) or calculated (CALC) TOT: Total; DIS: Dissolved; TRC: Total Recoverable; E: Estimated; <: Less than Detect; Blank: parameter not tested Validation Flags: A: Anomalous; UJ1: Blank; J2, UJ2: Standard; J3: Hold Time; J4, UJ4: Duplicate, Spike or Split Exceedance; R: Rejected

ANALYSES SUMMARY REPORT

CHHL01 - City of Helena

VDM Program

Sample Type: Private Well

SITE CODE	62
SAMPLE DATE	06/10/09
LAB	EL
SAMPLE NUMBER	HL-0906-109
LAB NUMBER	9060177010
REMARKS	

-- PHYSICAL PARAMETERS --

PH (FLD)	7.67
SC (UMHOS/CM AT 25 C) (FLD)	814
WATER TEMPERATURE (C) (FLD)	15.65

-- VOLATILE ORGANICS --

1,1,1,2-TETRACHLOROETHANE	<0.001
1,1,1-TRICHLOROETHANE	<0.001
1,1,2,2-TETRACHLOROETHANE	<0.001
1,1,2-TRICHLOROETHANE	<0.001
1,1-DICHLOROETHANE	<0.001
1,1-DICHLOROETHENE	<0.001
1,2-DIBROMOETHANE	<0.001
1,2-DICHLOROETHANE	<0.001
1,2-DICHLOROPROPANE	<0.001
2-HEXANONE	<0.02
ACETONE	<0.02
ACRYLONITRILE	<0.02
BENZENE	<0.001
BROMOCHLOROMETHANE	<0.001
BROMODICHLOROMETHANE	<0.001
BROMOFORM	<0.001
BROMOMETHANE	<0.001
CARBON DISULFIDE	<0.001
CARBON TETRACHLORIDE	<0.001
CHLOROBENZENE	<0.001
CHLORODIBROMOMETHANE	<0.001
CHLOROETHANE	<0.001
CHLOROFORM	<0.001
CHLOROMETHANE	<0.001
CIS-1,2-DICHLOROETHENE	<0.001
CIS-1,3-DICHLOROPROPENE	<0.001
DIBROMOMETHANE	<0.001
DICHLORODIFLUOROMETHANE	<0.001
ETHYLBENZENE	<0.001
IODOMETHANE	<0.001
M-P XYLENE	<0.001
METHYL ETHYL KETONE	<0.02
METHYL ISOBUTYL KETONE	<0.02
METHYLENE CHLORIDE	<0.001
O-XYLENE	<0.001
STYRENE	<0.001
TETRACHLOROETHENE	<0.001
TOLUENE	<0.001
TOTAL XYLENE	<0.001
TRANS-1,2-DICHLOROETHENE	<0.001
TRANS-1,3-DICHLOROPROPENE	<0.001
TRICHLOROETHENE	<0.001
TRICHLOROFLUOROMETHANE	<0.001
VINYL ACETATE	<0.001
VINYL CHLORIDE	<0.001

-- SEMI-VOLATILE EXTRACTABLES --

1,2,3-TRICHLOROPROPANE	<0.001
1,2-DIBROMO-3-CHLOROPROPANE	<0.001
1,2-DICHLOROBENZENE	<0.001
1,4-DICHLOROBENZENE	<0.001
TRANS-1,4-DICHLORO-2-BUTENE	<0.001

NOTES: All results in mg/L (Water) or mg/kg (Soil) unless noted and are laboratory (LAB) unless field (FLD) or calculated (CALC) TOT: Total; DIS: Dissolved; TRC: Total Recoverable; E: Estimated; <: Less than Detect; Blank: parameter not tested; Validation Flags: A: Anomalous; UJ1: Blank; J2, UJ2: Standard; J3: Hold Time; J4, UJ4: Duplicate, Spike or Split Exceedance; R: Rejected

ANALYSES SUMMARY REPORT

CHHL01 - City of Helena

VDM Program

Sample Type:Quality Control

SITE CODE	D.I. BLANK
SAMPLE DATE	06/10/09
LAB	EL
SAMPLE NUMBER	HL-0906-119
LAB NUMBER	9060177018
REMARKS	BLANK

```
-- PHYSICAL PARAMETERS --
      PH                      5.7
      SC (UMHOS/CM AT 25 C)  1.0
-- MAJOR CONSTITUENTS --
      CHLORIDE (CL)          <1
      SULFATE (SO4)          <1
-- NUTRIENTS --
      NITRATE + NITRITE AS N  <0.05
-- METALS & MINOR CONSTITUENTS --
      ANTIMONY (SB) DIS      <0.005
      ARSENIC (AS) DIS       <0.005
      BARIUM (BA) DIS        <0.1
      BERYLLIUM (BE) DIS     <0.001
      CADMIUM (CD) DIS       <0.001
      CHROMIUM (CR) DIS      <0.01
      COBALT (CO) DIS        <0.01
      COPPER (CU) DIS        <0.01
      IRON (FE) DIS          <0.03
      LEAD (PB) DIS          <0.01
      MERCURY (HG) DIS       <0.001
      NICKEL (NI) DIS        <0.01
      SELENIUM (SE) DIS      <0.005
      SILVER (AG) DIS        <0.005
      THALLIUM (TL) DIS      <0.005
      VANADIUM (V) DIS       <0.1
      ZINC (ZN) DIS          <0.01
-- VOLATILE ORGANICS --
      1,1,1,2-TETRACHLOROETHANE <0.001
      1,1,1-TRICHLOROETHANE    <0.001
      1,1,2,2-TETRACHLOROETHANE <0.001
      1,1,2-TRICHLOROETHANE    <0.001
      1,1-DICHLOROETHANE       <0.001
      1,1-DICHLOROETHENE       <0.001
      1,2-DIBROMOETHANE        <0.001
      1,2-DICHLOROETHANE       <0.001
      1,2-DICHLOROPROPANE      <0.001
      2-HEXANONE                <0.02
      ACETONE                   <0.02
      ACRYLONITRILE             <0.02
      BENZENE                   <0.001
      BROMOCHLOROMETHANE        <0.001
      BROMODICHLOROMETHANE      <0.001
      BROMOFORM                 <0.001
      BROMOMETHANE              <0.001
      CARBON DISULFIDE          <0.001
      CARBON TETRACHLORIDE      <0.001
      CHLOROBENZENE             <0.001
      CHLORODIBROMOMETHANE      <0.001
      CHLOROETHANE              <0.001
      CHLOROFORM                <0.001
      CHLOROMETHANE             <0.001
      CIS-1,2-DICHLOROETHENE     <0.001
      CIS-1,3-DICHLOROPROPENE   <0.001
      DIBROMOMETHANE            <0.001
      DICHLORODIFLUOROMETHANE   <0.001
      ETHYLBENZENE              <0.001
      IODOMETHANE               <0.001
      M-P XYLENE                 <0.001
      METHYL ETHYL KETONE        <0.02
      METHYL ISOBUTYL KETONE     <0.02
      METHYLENE CHLORIDE         <0.001
      O-XYLENE                   <0.001
      STYRENE                   <0.001
      TETRACHLOROETHENE         <0.001
      TOLUENE                   <0.001
      TOTAL XYLENE               <0.001
      TRANS-1,2-DICHLOROETHENE   <0.001
      TRANS-1,3-DICHLOROPROPENE <0.001
      TRICHLOROETHENE           <0.001
      TRICHLOROFLUOROMETHANE    <0.001
      VINYL ACETATE              <0.001
      VINYL CHLORIDE            <0.001
-- SEMI-VOLATILE EXTRACTABLES --
      1,2,3-TRICHLOROPROPANE    <0.001
      1,2-DIBROMO-3-CHLOROPROPANE <0.001
      1,2-DICHLOROBENZENE       <0.001
      1,4-DICHLOROBENZENE       <0.001
      TRANS-1,4-DICHLORO-2-BUTENE <0.001
```

NOTES: All results in mg/L (Water) or mg/kg (Soil) unless noted and are laboratory (LAB) unless field (FLD) or calculated (CALC)TOT:Total; DIS:Disolved, TRC:Total Recoverable; E:Estimated; <:Less than Detect; Blank: parameter not testedValidation Flags: A:Anomalous; UJ1:Blank; J2,UJ2: Standard; J3:Hold Time; J4,UJ4:Duplicate, Spike or Split Exceedance; R:Rejected

ANALYSES SUMMARY REPORT

CHHL01 - City of Helena

VDM Program

Sample Type:Quality Control

SITE CODE	D.I. BLANK
SAMPLE DATE	06/10/09
LAE	EL
SAMPLE NUMBER	HL-0906-119
LAB NUMBER	9060177016
REMARKS	BLANK

-- OTHER PARAMETERS --

CHEMICAL OXYGEN DEMAND	<1
CYANIDE (CN) TOT	<0.005

NOTES: All results in mg/L (Water) or mg/kg (Soil) unless noted and are laboratory (LAB) unless field (FLD) or calculated (CALC)TOT:Total; DIS:Disolved, TRC:Total Recoverable; E:Estimated; <:Less than Detect; Blank: parameter not testedValidation Flags: A:Anomalous; UJ1:Blank; J2,UJ2: Standard; J3:Hold Time; J4,UJ4:Duplicate, Spike or Split Exceedance; R:Rejected

ANALYSES SUMMARY REPORT

CHHL01 - City of Helena

VDM Program

Sample Type:Quality Control

SITE CODE	RINSBLANK
SAMPLE DATE	06/11/09
LAB	EL
SAMPLE NUMBER	HL-0906-125
LAB NUMBER	9060204006
REMARKS	BLANK

```
-- PHYSICAL PARAMETERS --
      PH      5.6
      SC (UMHOS/CM AT 25 C) 2.0
-- MAJOR CONSTITUENTS --
      CHLORIDE (CL)      <1.0
      SULFATE (SO4)      <1.0
-- NUTRIENTS --
      NITRATE + NITRITE AS N      <0.05
-- METALS & MINOR CONSTITUENTS --
      ANTIMONY (SB) DIS      <0.005
      ARSENIC (AS) DIS      <0.005
      BARIUM (BA) DIS      <0.1
      BERYLLIUM (BE) DIS      <0.001
      CADMIUM (CD) DIS      <0.001
      CHROMIUM (CR) DIS      <0.01
      COBALT (CO) DIS      <0.01
      COPPER (CU) DIS      <0.01
      IRON (FE) DIS      <0.03
      LEAD (PB) DIS      <0.01
      MERCURY (HG) DIS      <0.001
      NICKEL (NI) DIS      <0.01
      SELENIUM (SE) DIS      <0.005
      SILVER (AG) DIS      <0.005
      THALLIUM (TL) DIS      <0.005
      VANADIUM (V) DIS      <0.1
      ZINC (ZN) DIS      <0.01
-- VOLATILE ORGANICS --
      1,1,1,2-TETRACHLOROETHANE      <0.001
      1,1,1-TRICHLOROETHANE      <0.001
      1,1,2,2-TETRACHLOROETHANE      <0.001
      1,1,2-TRICHLOROETHANE      <0.001
      1,1-DICHLOROETHANE      <0.001
      1,1-DICHLOROETHENE      <0.001
      1,2-DIBROMOETHANE      <0.001
      1,2-DICHLOROETHANE      <0.001
      1,2-DICHLOROPROPANE      <0.001
      2-HEXANONE      <0.02
      ACETONE      <0.02
      ACRYLONITRILE      <0.02
      BENZENE      <0.001
      BROMOCHLOROMETHANE      <0.001
      BROMODICHLOROMETHANE      <0.001
      BROMOFORM      <0.001
      BROMOMETHANE      <0.001
      CARBON DISULFIDE      <0.001
      CARBON TETRACHLORIDE      <0.001
      CHLOROBENZENE      <0.001
      CHLORODIBROMOMETHANE      <0.001
      CHLOROETHANE      <0.001
      CHLOROFORM      <0.001
      CHLOROMETHANE      <0.001
      CIS-1,2-DICHLOROETHENE      <0.001
      CIS-1,3-DICHLOROPROPENE      <0.001
      DIBROMOMETHANE      <0.001
      DICHLORODIFLUOROMETHANE      <0.001
      ETHYLBENZENE      <0.001
      IODOMETHANE      <0.001
      M-P XYLENE      <0.001
      METHYL ETHYL KETONE      <0.02
      METHYL ISOBUTYL KETONE      <0.02
      METHYLENE CHLORIDE      <0.001
      O-XYLENE      <0.001
      STYRENE      <0.001
      TETRACHLOROETHENE      <0.001
      TOLUENE      <0.001
      TOTAL XYLENE      <0.001
      TRANS-1,2-DICHLOROETHENE      <0.001
      TRANS-1,3-DICHLOROPROPENE      <0.001
      TRICHLOROETHENE      <0.001
      TRICHLOROFLUOROMETHANE      <0.001
      VINYL ACETATE      <0.001
      VINYL CHLORIDE      <0.001
-- SEMI-VOLATILE EXTRACTABLES --
      1,2,3-TRICHLOROPROPANE      <0.001
      1,2-DIBROMO-3-CHLOROPROPANE      <0.001
      1,2-DICHLOROBENZENE      <0.001
      1,4-DICHLOROBENZENE      <0.001
      TRANS-1,4-DICHLORO-2-BUTENE      <0.001
```

NOTES: All results in mg/L (Water); or mg/kg (Soil) unless noted and are laboratory (LAB) unless field (FLD) or calculated (CALC) TOT:Total; DIS:Dissolved, TRC:Total Recoverable; E:Estimated; <:Less than Detect; Blank: parameter not tested Validation Flags: A:Anomalous; UJ1:Blank; J2,UJ2: Standard; J3:Hold Time; J4,UJ4:Duplicate, Spike or Split Exceedance; R:Rejected

ANALYSES SUMMARY REPORT

CHHL01 - City of Helena

VDM Program

Sample Type:Quality Control

SITE CODE	RINSBLANK
SAMPLE DATE	06/11/09
LAB	EL
SAMPLE NUMBER	HL-0906-125
LAB NUMBER	9060204006
REMARKS	BLANK

-- OTHER PARAMETERS --

CHEMICAL OXYGEN DEMAND	<1.0
CYANIDE (CN) TOT	<0.005

NOTES: All results in mg/L (Water) or mg/kg (Soil) unless noted and are laboratory (LAB) unless field (FLD); or calculated (CALC)TOT:Total; DIS:Dissolved, TRC:Total Recoverable; E:Estimated; <:Less than Detect; Blank: parameter not testedValidation Flags: A:Anomalous; UJ1:Blank; J2,UJ2: Standard; J3:Hold Time; J4,UJ4:Duplicate, Spike or Split Exceedance; R:Rejected

ANALYSES SUMMARY REPORT

CHHL01 - City of Helena

VDM Program

Sample Type:Quality Control

SITE CODE	TRIPBLANK
SAMPLE DATE	06/11/09
LAB	EL
SAMPLE NUMBER	HL-0906-126
LAB NUMBER	9060204007
REMARKS	BLANK

-- VOLATILE ORGANICS --

1,1,1,2-TETRACHLOROETHANE	<0.001
1,1,1-TRICHLOROETHANE	<0.001
1,1,2,2-TETRACHLOROETHANE	<0.001
1,1,2-TRICHLOROETHANE	<0.001
1,1-DICHLOROETHANE	<0.001
1,1-DICHLOROETHENE	<0.001
1,2-DIBROMOETHANE	<0.001
1,2-DICHLOROETHANE	<0.001
1,2-DICHLOROPROPANE	<0.001
2-HEXANONE	<0.02
ACETONE	<0.02
ACRYLONITRILE	<0.02
BENZENE	<0.001
BROMOCHLOROMETHANE	<0.001
BROMODICHLOROMETHANE	<0.001
BROMOFORM	<0.001
BROMOMETHANE	<0.001
CARBON DISULFIDE	<0.001
CARBON TETRACHLORIDE	<0.001
CHLOROBENZENE	<0.001
CHLORODIBROMOMETHANE	<0.001
CHLOROETHANE	<0.001
CHLOROFORM	<0.001
CHLOROMETHANE	<0.001
CIS-1,2-DICHLOROETHENE	<0.001
CIS-1,3-DICHLOROPROPENE	<0.001
DIBROMOMETHANE	<0.001
DICHLORODIFLUOROMETHANE	<0.001
ETHYLBENZENE	<0.001
IODOMETHANE	<0.001
M-P XYLENE	<0.001
METHYL ETHYL KETONE	<0.02
METHYL ISOBUTYL KETONE	<0.02
METHYLENE CHLORIDE	<0.001
O-XYLENE	<0.001
STYRENE	<0.001
TETRACHLOROETHENE	<0.001
TOLUENE	<0.001
TOTAL XYLENE	<0.001
TRANS-1,2-DICHLOROETHENE	<0.001
TRANS-1,3-DICHLOROPROPENE	<0.001
TRICHLOROETHENE	<0.001
TRICHLOROFLUOROMETHANE	<0.001
VINYL ACETATE	<0.001
VINYL CHLORIDE	<0.001

-- SEMI-VOLATILE EXTRACTABLES --

1,2,3-TRICHLOROPROPANE	<0.001
1,2-DIBROMO-3-CHLOROPROPANE	<0.001
1,2-DICHLOROBENZENE	<0.001
1,4-DICHLOROBENZENE	<0.001
TRANS-1,4-DICHLORO-2-BUTENE	<0.001

NOTES: All results in mg/L (Water) or mg/kg (Soil) unless noted and are laboratory (LAB) unless field (FLD) or calculated (CALC)TOT:Total; DIS:Dissolved; TRC:Total Recoverable; E:Estimated; <:Less than Detect; Blank: parameter not testedValidation Flags: A:Anomalous; UJ1:Blank; J2,UJ2: Standard; J3:Hold Time; J4,UJ4:Duplicate, Spike or Split Exceedance; R:Rejected

APPENDIX 3

HYDROMETRICS FIELD NOTES

Site	Sample Code #	Date Time	SWL TD	Bottles
Initiation	HL-0906	6/9/09	6.23'	2/40/F/HCL/VOC
Gallery	100	0845	—	1/40/F/RN/VOC
MR				
MPL-2	HL-0906	6/9/09	18.78'	
	101	1030	35.5'	
Res #16	HL-0906	6/9/09	—	
Erickson	102	1010	—	
Res #5	HL-0906	6/9/09	—	
Colvin	103	1130	—	
Res #40	HL-0906	6/9/09	—	
Hartman	104	1300	—	
Res #57	HL-0906	6/9/09	—	
Francis	105	1310	—	
Res #52	HL-0906	6/9/09	—	
Aftz	106	1320	—	

PH	Sc	Temp
7.17	424	12.2
7.04	994	9.6
7.55	1117	11.0
7.71	1185	10.9
7.63	1144	11.3
7.67	1528	10.2
7.66	1206	11.5

Sampled with 2" Disp
Boiler.

Purged and Sampled with
2" 12V Pump, Removed
12 gal

Let Run 5min and
Sampled

Let Run 10min and
Sampled

Let Run 10min and
Sampled

Ran Pump For 10min and
Sampled

Ran Pump For 10min and
Sampled

Site	Sample Code#	Date Time	SWL TD'	Bottles
Res#48	HL-0906	6/9/09	—	SAME AS Before
Barbeau	107	1330	—	
I-4	HL-0906	6/9/09	—	
	108	1350	—	
Res#62	HL-0906	6/10/09	—	
Herrin	109	0750	—	↓
HL-90-2	HL-0906	6/10/09	51.80'	
	110	0835	68'	
HL-94-1	HL-0906	6/10/09	60.88'	
	111	0945	88'	↓
HL-94-2	HL-0906	6/10/09		No Samples
	112	1000	69'	
			41'	
HL-06-d1	HL-0906	6/10/09	14.66'	↓
	113	1020	26.5'	

P/H	SL	Temp	
7.61	1238	11.1	Run Pump for 10 min and Sampled
7.37	1088	10.9	Run Pump for 5 min Then Sampled
7.67	814	15.65	Run Pump for 5 min Sampled From Near Spigot ON Deck at House, Next to Deck,
7.37	644	4.7	Purged 30 gal With 12V 2" Pump and Sampled.
7.27	1003	10.8	Purged 15 gal With 2" 12V Pump and Sampled, Very Turbid At First
-	-	-	Well Has Been Vandalized No Sample Can be Taken
6.78	1385	12.2	Purged 15 gal To Develop Sampled With 2" 12V Pump, Water Still Very Turbid, Brown

SITC	Code#	TIME		
HL-90-3	HL-0906	6/10/09	66.54'	Complete Set
	114	1220	79'	
HL-90-3	HL-0906	6/10/09	—	
Dup	115	1245	—	
HL-94-3	HL-0906	6/10/09	37.86'	
	116	1315	69'	
HL-90-1	HL-0906	6/10/09	59.10'	
	117	—	60'	
				Complete Set
MPC-1	HL-0906	6/10/09	24.85'	
	118	1340	39'	
DI Blank	HL-0906	6/10/09	—	
	119	1430	—	

7.14 / 120.3 / 11.3

Purged 30gal With
2" 12v Pump and
Sampled

7.48 / 980 / 11.1

Purged 15gal With
2" 12v Pump and
Sampled

To Little Water To Sample.

7.20 / 1066 / 9.6

Purged 10gal With
2" 12v Pump and
Sampled

— / — / —

DI Water Poured
Straight into Sample
Bottles

Site	Sample Code#	Date Time	SWL TD'	Bottles
EPA-1	HL-0406-120	6/11/09 0800	49.31' 59'	Complete Set
MPL-5	HL-0406-121	6/11/09 0920	59.26' 73.4'	
HL-44-1	HL-0406-122	6/11/09 1145	N/A 71' 98'	
HL-44-2	HL-0406-123	6/11/09 1230	88.95' 118'	
HL-44-3	HL-0406-124	6/11/09 1300	73.22' 105'	
Rinse & Blank	HL-0406-125	6/11/09 1345	— —	

PH	SC	Temp	
6.87	1592	11.1	Bailed 52 gals, Let Recover and Sampled
6.98	2769	12.1	Bailed 70 gals with 2nd D.S. Bailor and Sampled
7.16	1243	11.78	GPM - 7.83 T ₁ - 564386 T ₂ - 292036 H - 621.0
7.35	854	11.9	GPM - 0.0 T ₁ - 407611 T ₂ - 406150 H - 622.1
7.30	449	11.5	GPM - 32.8 T ₁ - 681171 T ₂ - 996240 H - 621.8
—	—	—	Rinse Blank, DI Water Run Through 12v Pump System and Into Sample Bottles

Water Levels

<u>Site</u>	<u>SWL</u>	<u>Date</u>	<u>Time</u>
126 I-1	65.92	6/10/09	07:37
127 82-3	69.92	6/12/09	10:30
128 EPA-2	NA	6/12/09	10:45
129 EPA-4	75.64	6/12/09	10:15
130 83-7	DRY	6/12/09	10:55

HF-FORM-430

Project Name: City of Helena

Project Code: 1273

Sample Team Member(s): R. Lane

Laboratory Used: Energy Labs

Site Designation: Infiltration Gallery

Sample Code Number: HL-0906-100

Sample Date: 06/9/09

Sample Time: 0845 (military)

**If Duplicate Sample Collected,
Please Record Below**

Duplicate Sample Code #:

Duplicate Sample Time:

Site ConditionsNew Site: Yes ☐ No ☒ Photo taken: Yes ☐ No ☒

Site Type: DRY surface water process water

monitoring well domestic well adit seep

spring other:

Weather Conditions: calm breeze windy

no precip. rain snow

clear p. cloudy overcast

Air Temperature: °C 49 °F

For Groundwater Sampleswell volume formula: $V = (TD-SWL) \times (\text{Dia.}^2) / 25$

Comments

TD (ft.) Pumping Rate gpm

SWL (ft.): 6.23 no access/pumping

Casing Diameter (I.D.)

Water Volume (V) (gal): V x 3 = (gal)

MP Description

Actual Vol. Removed (gal.)

Water Level Recovery: slow moderate rapid

For Surface Water Samples

Flow Method: Marsh McBirney Volumetric Flume Weir Estimate

Other Flow or Description:

Flow: gpm cfs Staff Gage:

Field Parameter StabilizationAdditional Parameters
or NotesTime
(military)Oxidation
Reduction
Potential (mV)Dissolved
Oxygen (mg/l)

pH

S.C.
(µmhos/cm)Turbidity
(n.t.u.)Temperature
(°C)Turbidity:
(circle)

clear

slight

moderate
verySample Method:
(describe)

grab

composite

pump bailer other

Field Parameters

Sample Duplicate

ORP (mV)

DO (mg/l)

pH

SC (µmhos/cm)

Turbidity (ntu)

H₂O Tmp. (°C)

Color

Other; odor

Bottles Collected

Quantity

Size

Filter or Unfilt.

Preservative

Parameter

Additional Notes

3

40mL

UF

HCL

VOC

Comments:

Sample Team Member Signature:

Page

of

WATER SAMPLING FORM

HF-FORM-430

Project Name: City of HelenaProject Code: 1273Sample Team Member(s): R, LaneLaboratory Used: Energy LabsSite Designation: MPC-2Sample Code Number: HL-0906-101Sample Date: 06/9/09Sample Time: 1030 (military)If Duplicate Sample Collected,
Please Record BelowDuplicate Sample Code #: /Duplicate Sample Time: /Site ConditionsNew Site: Yes ☐ No ☒ Photo taken: Yes ☐ No ☒

Site Type: DRY surface water process water

monitoring well domestic well adit seep

spring other: _____

Weather Conditions: calm breeze windyno precip rain snowclear p. cloudy overcastAir Temperature: _____ °C 44 °Fwell volume formula: $V = (TD-SWL) \times (\text{Dia.}^2) / 25$

Comments

TD (ft.) 35.5 Pumping Rate 3 gpmSWL (ft.) 18.78 no access/pumpingCasing Diameter (I.D.) 2"Water Volume (V) (gal): 3 $V \times 3 = (\text{gal})$ 9MP Description Top of PVCActual Vol. Removed (gal.) 12Water Level Recovery: slow moderate rapidFor Surface Water Samples

Flow Method: Marsh McBirney Volumetric Flume Weir Estimate

Other Flow or Description: _____

Flow: gpm cfs Staff Gage: _____

Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Turbidity (n.t.u.)	Temperature (°C)	Additional Parameters or Notes
<u>3 gal</u>			<u>7.20</u>	<u>959</u>		<u>9.9</u>	
<u>6 gal</u>			<u>7.07</u>	<u>950</u>		<u>9.7</u>	
<u>9 gal</u>			<u>7.05</u>	<u>946</u>		<u>9.7</u>	
<u>12 gal</u>			<u>7.04</u>	<u>944</u>		<u>9.6</u>	

Turbidity: clear ☐ moderate ☒
(circle) slight verySample Method: grab composite pump bailer other
(describe) 12Field Parameters

Sample	Duplicate
ORP (mV)	
DO (mg/l)	
pH	<u>7.04</u>
SC (µmhos/cm)	<u>944</u>
Turbidity (ntu)	
H ₂ O Tmp. (°C)	<u>9.6</u>
Color	<u>Lt Yellow</u>
Other; odor	<u>None</u>

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
<u>3</u>	40mL	UF	HCL	VOC	

Comments: _____

Sample Team Member Signature: R. Lane

Page _____ of _____

WATER SAMPLING FORM

HF-FORM-430

Project Name: City of HelenaProject Code: 1273Sample Team Member(s): R, LaneLaboratory Used: Energy LabsSite Designation: Res 16, EricksonSample Code Number: HL-0906-102Sample Date: 06/9/09Sample Time: 1010 (military)

If Duplicate Sample Collected,
Please Record Below

Duplicate Sample Code #: Duplicate Sample Time: Site ConditionsNew Site: Yes ☐ No ☒ Photo taken: Yes ☐ No ☒

Site Type: DRY surface water process water

monitoring well domestic well adit seepspring other: Weather Conditions: calm breeze windyno precip. rain snowclear p. cloudy overcastAir Temperature: °C 50.° FFor Groundwater Sampleswell volume $V = (TD-SWL) \times (Dia.^2)$ formula: 25

Comments

TD (ft.) Pumping Rate gpmSWL (ft.): no access/pumpingCasing Diameter (I.D.): Water Volume (V) (gal): $V \times 3 =$ (gal)MP Description Actual Vol. Removed (gal.)

Water Level Recovery: slow moderate rapid

For Surface Water SamplesFlow Method: Marsh McBirney Volumetric Flume Weir EstimateOther Flow or Description: Flow: gpm cfs Staff Gage: Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Turbidity (n.t.u.)	Temperature (°C)	Additional Parameters or Notes

Turbidity:

(circle)

clear

slight

moderate

very

Sample Method:

(describe)

grab

composite

pump

bailer other

RedField Parameters

Sample Duplicate

ORP (mV)

DO (mg/l)

pH

SC (µmhos/cm)

Turbidity (ntu)

H₂O Temp. (°C)

Color

Other; odor

7.55111711.0NoneNoneBottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
<u>3</u>	40mL	UF	HCL	VOC	

Comments: Sample Team Member Signature: R. LanePage of

WATER SAMPLING FORM

HF-FORM-430

Project Name: City of HelenaProject Code: 1273Sample Team Member(s): R. LaneLaboratory Used: Energy LabsSite Designation: Res #5 Colv:nSample Code Number: HL-0906-103Sample Date: 06/9/09Sample Time: 1130 (military)**If Duplicate Sample Collected,
Please Record Below**Duplicate Sample Code #: Duplicate Sample Time: **Site Conditions**New Site: Yes ☐ No ☒ Photo taken: Yes ☐ No ☒

Site Type: DRY surface water process water

monitoring well domestic well adit seepspring other: Weather Conditions: calm breeze windyno precip rain snowclear p. cloudy overcastAir Temperature: °C 50 °F**For Groundwater Samples**well volume formula: $V = (TD-SWL) \times (Dia.^2) / 25$

Comments

TD(ft.) Pumping Rate gpmSWL (ft.): no access/pumpingCasing Diameter (I.D.): Water Volume (V) (gal): $V \times 3 = (gal)$ MP Description Actual Vol. Removed (gal.)

Water Level Recovery: slow moderate rapid

For Surface Water Samples

Flow Method: Marsh McBirney Volumetric Flume Weir Estimate

Other Flow or Description: Flow: gpm cfs Staff Gage: **Field Parameter Stabilization**

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (μmhos/cm)	Turbidity (n.t.u.)	Temperature (°C)	Additional Parameters or Notes
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>

Turbidity: clear slight moderate verySample Method: grab composite pump bailer other**Field Parameters**

	Sample	Duplicate
ORP (mV)	<u> </u>	<u> </u>
DO (mg/l)	<u> </u>	<u> </u>
pH	<u>7.71</u>	<u> </u>
SC (μmhos/cm)	<u>1185</u>	<u> </u>
Turbidity (ntu)	<u> </u>	<u> </u>
H ₂ O Tmp. (°C)	<u>10.9</u>	<u> </u>
Color	<u>None</u>	<u> </u>
Other; odor	<u>None</u>	<u> </u>

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
<u>3</u>	<u>40mL</u>	<u>UF</u>	<u>HCL</u>	<u>VOC</u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>

Comments: Sample Team Member Signature: R. LanePage of

HF-FORM-430

Laboratory Used: Energy Labs

Sample Time: 1300 (military)

Duplicate Sample Time:

Air Temperature: $^{\circ}\text{C}$ 55 $^{\circ}\text{F}$

Comments

TD(ft.) _____ Pumping Rate _____ gpm

SWL (ft): no access/pumping

Casing Diameter (I.D.)

Water Volume (V) (gal): $V \times 3 = (\text{gal})$

MP Description

Actual Vol. Removed (gal.)

Water Level Recovery: slow moderate rapid

Other Flow or Description:

Flow: ✓ gpm cfs Staff Gage

[illegible]

Turbidity: clear moderate
(circle) slight very

Sample Method: grab composite pump bailer other
(describe) *Red*

Bottles Collected

Sample	Duplicate
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
16	16
17	17
18	18
19	19
20	20
21	21
22	22
23	23
24	24
25	25
26	26
27	27
28	28
29	29
30	30
31	31
32	32
33	33
34	34
35	35
36	36
37	37
38	38
39	39
40	40
41	41
42	42
43	43
44	44
45	45
46	46
47	47
48	48
49	49
50	50
51	51
52	52
53	53
54	54
55	55
56	56
57	57
58	58
59	59
60	60
61	61
62	62
63	63
64	64
65	65
66	66
67	67
68	68
69	69
70	70
71	71
72	72
73	73
74	74
75	75
76	76
77	77
78	78
79	79
80	80
81	81
82	82
83	83
84	84
85	85
86	86
87	87
88	88
89	89
90	90
91	91
92	92
93	93
94	94
95	95
96	96
97	97
98	98
99	99
100	100

Quantity

Size

Filter or Unfilt.

Preservative

Parameter

Additional Notes

ORP (mV)

DO (mg/l)

pH

SC ($\mu\text{mhos/cm}$)

Turbidity (ntu)

H₂O Tmp. (°C)

Color

Other; odor

Comments:

3

40mL

UF

HCL

VOC

H:\FILES\150\ADMIN\HSOP\SEC6.0\HF-430.XLS

HF-FORM-430 (1/98)

STANDARD OPERATING PROCEDURE WATER SAMPLING FORM HF-FORM-430

Project Name: City of Helena
 Project Code: 1273
 Sample Team Member(s): R. Lane
 Laboratory Used: Energy Labs

Site Designation: Res #57 Francis
 Sample Code Number: HL-0906-105
 Sample Date: 06/9/09
 Sample Time: 13:10 (military)

If Duplicate Sample Collected, Please Record Below

Duplicate Sample Code #:
 Duplicate Sample Time:

Site Conditions

New Site: Yes ☐ No ☒ Photo taken: Yes ☐ No ☒
 Site Type: DRY surface water process water
 monitoring well domestic well adit seep
 spring other:

Weather Conditions: calm breeze windy
no precip. rain snow
 clear p. cloudy overcast
 Air Temperature: °C 55 °F

For Groundwater Samples

well volume formula: $V = (TD-SWL) \times (\text{Dia.}^2) / 25$	Comments
TD (ft.): <u> </u>	Pumping Rate <u> </u> gpm
SWL (ft.): <u> </u>	no access/pumping
Casing Diameter (I.D.): <u> </u>	
Water Volume (V) (gal): <u> </u>	$V \times 3 = (\text{gal})$
MP Description: <u> </u>	
Actual Vol. Removed (gal.): <u> </u>	
Water Level Recovery: <u> </u>	slow moderate rapid

For Surface Water Samples

Flow Method: Marsh McBirney Volumetric Flume Weir Estimate
 Other Flow or Description:
 Flow: gpm cfs Staff Gage:

Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Turbidity (n.t.u.)	Temperature (°C)	Additional Parameters or Notes

Turbidity: clear moderate
 (circle) slight very

Sample Method: grab composite pump bailer other
 (describe) Red

Field Parameters

Sample	Duplicate
ORP (mV)	
DO (mg/l)	
pH	<u>7.67</u>
SC (µmhos/cm)	<u>1528</u>
Turbidity (ntu)	
H ₂ O Tmp. (°C)	<u>10.2</u>
Color	<u>None</u>
Other; odor	<u>None</u>

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
<u>3</u>	40mL	UF	HCL	VOC	

Comments:

Sample Team Member Signature: Phil Z

Page of

WATER SAMPLING FORM

HF-FORM-430

Project Name: City of Helena

Project Code: 1273

Sample Team Member(s): R, Lane

Laboratory Used: Energy Labs

Site Designation: Res #52 Hartz

Sample Code Number: HL-0906-106

Sample Date: 06/ 9 /09

Sample Time: 1320 (military)

If Duplicate Sample Collected,
Please Record Below

Duplicate Sample Code #:

Duplicate Sample Time:

Site Conditions

New Site: Yes ☐ No ☒ Photo taken: Yes ☐ No ☒

Site Type: DRY surface water process water

monitoring well domestic well dit seep

spring other:

Weather Conditions: calm breeze windyno precip. rain snowclear p. cloudy overcast

Air Temperature: °C 55° F

For Groundwater Samples

well volume formula: $V = (TD-SWL) \times (\text{Dia}^2) / 25$

Comments

TD (ft.) Pumping Rate gpm

SWL (ft.): no access/pumping

Casing Diameter (I.D.):

Water Volume (V) (gal): $V \times 3 = (\text{gal})$

MP Description

Actual Vol. Removed (gal.)

Water Level Recovery: slow moderate rapid

For Surface Water Samples

Flow Method: Marsh McBirney Volumetric Flume Weir Estimate

Other Flow or Description:

Flow: gpm cfs Staff Gage:

Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Turbidity (n.t.u.)	Temperature (°C)	Additional Parameters or Notes

Turbidity: clear moderate slight verySample Method: grab composite pump bailer other
(describe) Ded

Field Parameters

Sample Duplicate

ORP (mV)

DO (mg/l)

pH

SC (µmhos/cm)

Turbidity (ntu)

H₂O Tmp. (°C)

Color

Other; odor

7.66

1206

11.5

None

None

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
2	40mL	UF	HCL	VOC	

Comments:

Sample Team Member Signature: Mil Z

Page of

Project Name: City of HelenaProject Code: 1273Sample Team Member(s): R, LaneLaboratory Used: Energy LabsSite Designation: Res #48 BarberSample Code Number: HL-0906-107Sample Date: 06/ 9 /09Sample Time: 1330 (military)**If Duplicate Sample Collected,
Please Record Below**Duplicate Sample Code #: Duplicate Sample Time: **Site Conditions**New Site: Yes ☐ No ☒ Photo taken: Yes ☐ No ☒
Site Type: DRY surface water process watermonitoring well ☐ domestic well ☒ adit ☐ seepspring other: Weather Conditions: calm breeze windyno precip. rain snowclear p. cloudy overcastAir Temperature: °C 55 °F**For Groundwater Samples**well volume formula: $V = (TD - SWL) \times (\text{Dia.})^2 / 25$

Comments

TD(ft.) Pumping Rate gpmSWL (ft.) no access/pumpingCasing Diameter (I.D.) Water Volume (V) (gal): V x 3 = (gal)MP Description Actual Vol. Removed (gal.)

Water Level Recovery: slow moderate rapid

For Surface Water Samples

Flow Method: Marsh McBirney Volumetric Flume Weir Estimate

Other Flow or Description: Flow: gpm cfs Staff Gage: **Field Parameter Stabilization**

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Turbidity (n.t.u.)	Temperature (°C)	Additional Parameters or Notes

Turbidity: clear moderate
(circle) slight verySample Method: grab composite pump bailer other
(describe) Red**Field Parameters**

Sample Duplicate

ORP (mV)		
DO (mg/l)		
pH	<u>7.61</u>	
SC (µmhos/cm)	<u>1238</u>	
Turbidity (ntu)		
H ₂ O Tmp. (°C)	<u>11.1</u>	
Color	<u>None</u>	
Other; odor	<u>None</u>	

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
<u>3</u>	40mL	UF	HCL	VOC	

Comments: Sample Team Member Signature: R-LPage of

STANDARD OPERATING PROCEDURE WATER SAMPLING FORM HF-FORM-430

Project Name: City of HelenaProject Code: 1273Sample Team Member(s): R, LaneLaboratory Used: Energy LabsSite Designation: I-4Sample Code Number: HL-0906-108Sample Date: 06/ 9 /09Sample Time: 1350 (military)

If Duplicate Sample Collected,
Please Record Below

Duplicate Sample Code #: _____

Duplicate Sample Time: _____

Site Conditions

New Site: Yes ☐ No ☒ Photo taken: Yes ☐ No ☒
 Site Type: DRY surface water process water

monitoring well domestic well adit seep

spring other: _____

Weather Conditions: calm breeze windy
no precip. rain snow
 clear p. cloudy overcast

Air Temperature: _____ °C 60.0 °F**For Groundwater Samples**

well volume formula: $V = (TD-SWL) \times (\text{Dia.}^2) / 25$	Comments
TD(ft.) _____ Pumping Rate _____ gpm	no access/pumping
SWL (ft.): _____	
Casing Diameter (I.D.): _____	
Water Volume (V) (gal): _____ $V \times 3 = (\text{gal})$	
MP Description _____	
Actual Vol. Removed (gal.): _____	
Water Level Recovery: <u>slow</u> moderate rapid	

For Surface Water Samples

Flow Method: <u>Marsh McBirney</u> Volumetric Flume Weir Estimate
Other Flow or Description: _____
Flow: _____ gpm cfs Staff Gage: _____

Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Turbidity (n.t.u.)	Temperature (°C)	Additional Parameters or Notes

Turbidity: clear moderate slight very

Sample Method: grab composite pump bailer other
 (describe) DeC

Field Parameters

Sample Duplicate

ORP (mV)		
DO (mg/l)		
pH	<u>7.37</u>	
SC (µmhos/cm)	<u>1088</u>	
Turbidity (ntu)		
H ₂ O Tmp. (°C)	<u>10.9</u>	
Color	<u>None</u>	
Other; odor	<u>None</u>	

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
<u>3</u>	<u>40mL</u>	<u>UF</u>	<u>HCL</u>	<u>VOC</u>	

Comments: _____

Sample Team Member Signature: R-L

Page _____ of _____

Project Name: City of HelenaProject Code: 1273Sample Team Member(s): R, LaneLaboratory Used: Energy LabsSite Designation: Res #62 HerminSample Code Number: HL-0906-109Sample Date: 06/10/09Sample Time: 0750 (military)**If Duplicate Sample Collected,
Please Record Below**

Duplicate Sample Code #: _____

Duplicate Sample Time: _____

Site ConditionsNew Site: Yes ☐ No ☒ Photo taken: Yes ☐ No ☒
Site Type: DRY surface water process watermonitoring well domestic well adit seep

spring other: _____

Weather Conditions: calm breeze windy
no precip. rain snow
clear p. cloudy overcastAir Temperature: _____ °C 45 °F**For Groundwater Samples**well volume formula: $V = \frac{(TD-SWL) \times (\text{Dia.})^2}{25}$

Comments

TD (ft.) _____ Pumping Rate _____ gpm

SWL (ft.): _____ no access/pumping

Casing Diameter (I.D.): _____

Water Volume (V) (gal): _____ V x 3 = (gal) _____

MP Description _____

Actual Vol. Removed (gal.) _____

Water Level Recovery: slow moderate rapid

For Surface Water Samples

Flow Method: Marsh McBirney Volumetric Flume Weir Estimate

Other Flow or Description: _____

Flow: _____ gpm _____ cfs Staff Gage: _____

Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Turbidity (n.t.u.)	Temperature (°C)	Additional Parameters or Notes

Turbidity: clear moderate
(circle) slight verySample Method: grab composite pump bailer other
(describe)**Field Parameters**

	Sample	Duplicate
ORP (mV)		
DO (mg/l)		
pH	<u>7.67</u>	
SC (µmhos/cm)	<u>814</u>	
Turbidity (ntu)		
H ₂ O Tmp. (°C)	<u>15.6</u>	
Color	<u>None</u>	
Other; odor	<u>None</u>	

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
<u>3</u>	<u>40mL</u>	<u>UF</u>	<u>HCL</u>	<u>VOC</u>	

Comments: _____

Sample Team Member Signature: R. Lane

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WATER SAMPLING FORM

HF-FORM-430

Project Name: City of Helena

Project Code: 1273

Sample Team Member(s): R. Lane

Laboratory Used: Energy Labs

Site Designation: HL-40-2

Sample Code Number: HL-0906-110

Sample Date: 06/10/09

Sample Time: 0835 (military)

If Duplicate Sample Collected,Please Record Below

Duplicate Sample Code #: /

Duplicate Sample Time: /

Site ConditionsNew Site: Yes ☐ No ☒ Photo taken: Yes ☐ No ☒
Site Type: DRY surface water process water

monitoring well domestic well adit seep

spring other: /

Weather Conditions: calm ☒ breeze ☐ windyno precip. ☒ rain ☐ snowclear p. cloudy ☒ overcast ☐

Air Temperature: °C °F

For Groundwater Sampleswell volume formula: $V = (TD-SWL) \times (\text{Dia.}^2) / 25$

Comments

TD (ft.) 68' Pumping Rate / gpm

SWL (ft.) 51.80' no access/pumping

Casing Diameter (I.D.) 4"

Water Volume (V) (gal): 10 V x 3 = (gal) 30

MP Description PVC

Actual Vol. Removed (gal.) /

Water Level Recovery: slow moderate rapid

For Surface Water Samples

Flow Method: Marsh McBirney Volumetric Flume Weir Estimate

Other Flow or Description: /

Flow: gpm cfs Staff Gage: /

Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (μmhos/cm)	Turbidity (n.t.u.)	Temperature (°C)	Additional Parameters or Notes
10gal			7.46	677		9.6	
20gal			7.39	690		9.6	
30gal			7.37	694		9.7	

Turbidity:

(circle)

clear ☒slight ☐moderate ☐very ☐

Sample Method:

(describe)

grab ☒composite ☐pump ☒

bailer other

12✓

Field Parameters

Sample Duplicate

ORP (mV)

DO (mg/l)

pH

SC (μmhos/cm)

Turbidity (ntu)

H₂O Tmp. (°C)

Color

Other; odor

Quantity

Size

Filter or Unfilt.

Preservative

Parameter

Additional Notes

3

40mL

UF

HCL

VOC

1

250

UF

RAW

Commons

1

250

F

HNO3

Dis Metals

1

250

UF

H2SO4

Nut

1

500

UF

NaOH3

CN

Comments:

Sample Team Member Signature: R. Lane

Page

of

WATER SAMPLING FORM

HF-FORM-430

Project Name: City of HelenaProject Code: 1273Sample Team Member(s): R. LaneLaboratory Used: Energy LabsSite Designation: HL-94-1Sample Code Number: HL-0906-111Sample Date: 06/10/09Sample Time: 0945 (military)For Groundwater SamplesIf Duplicate Sample Collected,
Please Record BelowDuplicate Sample Code #: /Duplicate Sample Time: /Site ConditionsNew Site: Yes ☐ No ☒ Photo taken: Yes ☐ No ☒
Site Type: DRY surface water process water

monitoring well domestic well adit seep

spring other: /Weather Conditions: calm ☐ breeze ☒ windy ☐
no precip ☒ rain ☐ snow ☐
clear ☐ p. cloudy ☐ overcast ☒Air Temperature: 50 °Fwell volume formula: $V = (TD-SWL) \times (\text{Dia.}^2) / 25$

Comments

TD (ft.) 88 Pumping Rate 25 gpmSWL (ft.) 60.88 no access/pumpingCasing Diameter (I.D.) 21Water Volume (V) (gal): 4.3 V x 3 = (gal) 12.9MP Description Top of PVCActual Vol. Removed (gal.) 15Water Level Recovery: slow ☒ moderate ☐ rapid ☐For Surface Water Samples

Flow Method: Marsh McBimby Volumetric Flume Weir Estimate

Other Flow or Description: /Flow: / gpm cfs Staff Gage: /Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Turbidity (n.t.u.)	Temperature (°C)	Additional Parameters or Notes
<u>5 gal</u>			<u>7.34</u>	<u>991</u>		<u>10.7</u>	
<u>10 gal</u>			<u>7.28</u>	<u>991</u>		<u>10.7</u>	
<u>15 gal</u>			<u>7.27</u>	<u>1003</u>		<u>10.8</u>	

Turbidity: clear ☐ moderate ☐
(circle) slight ☒ very ☐Sample Method: grab ☒ composite ☐ pump ☒ bailer ☐ other ☐
(describe) 12vField Parameters

	Sample	Duplicate
ORP (mV)		
DO (mg/l)		
pH	<u>7.27</u>	
SC (µmhos/cm)	<u>1003</u>	
Turbidity (ntu)		
H ₂ O Tmp. (°C)	<u>10.8</u>	
Color	<u>None</u>	
Other; odor	<u>yes</u>	

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
<u>3</u>	<u>40mL</u>	<u>UF</u>	<u>HCL</u>	<u>VOC</u>	
<u>1</u>	<u>250</u>	<u>UF</u>	<u>RAW</u>	<u>Commons</u>	
<u>1</u>	<u>250</u>	<u>F</u>	<u>HNO3</u>	<u>Dis Metals</u>	
<u>1</u>	<u>250</u>	<u>UF</u>	<u>H2SO4</u>	<u>Nut</u>	
<u>1</u>	<u>500</u>	<u>UF</u>	<u>NaOH3</u>	<u>CN</u>	

Comments: /Sample Team Member Signature: RJLPage 1 of 1

WATER SAMPLING FORM

HF-FORM-430

Project Name: City of HelenaProject Code: 1273Sample Team Member(s): R, LaneLaboratory Used: Energy LabsSite Designation: HL-44-2Sample Code Number: HL-0906-112Sample Date: 06/10/09Sample Time: 1000 (military)**If Duplicate Sample Collected,
Please Record Below**Duplicate Sample Code #: Duplicate Sample Time: **Site Conditions**New Site: Yes ☐ No ☒ Photo taken: Yes ☐ No ☒
Site Type: DRY surface water process water

monitoring well domestic well adit seep

spring other:

Weather Conditions: calm breeze windy

no precip rain snow

clear p. cloudy overcast

Air Temperature: °C 50 °F**For Groundwater Samples**well volume formula: $V = (TD-SWL) \times (Dia.^2) / 25$

Comments

TD (ft.) Pumping Rate gpmSWL (ft.) no access/pumpingCasing Diameter (I.D.) Water Volume (V) (gal): $V \times 3 =$ (gal)MP Description Actual Vol. Removed (gal.)

Water Level Recovery: slow moderate rapid

For Surface Water Samples

Flow Method: Marsh McBirney Volumetric Flume Weir Estimate

Other Flow or Description: Flow: gpm cfs Staff Gage: **Field Parameter Stabilization**

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Turbidity (n.t.u.)	Temperature (°C)	Additional Parameters or Notes

Turbidity: clear moderate
(circle) slight verySample Method: grab composite pump bailer other
(describe)**Field Parameters**

Sample Duplicate

ORP (mV)		
DO (mg/l)		
pH		
SC (µmhos/cm)		
Turbidity (ntu)		
H ₂ O Tmp. (°C)		
Color		
Other; odor		

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
2	40mL	UF	HCL	VOC	
1	L	UF	RAW	Commons	
1	250	F	HNO3	Dis Metals	
1	250	UF	H2SO4	Nut	
1	500	UF	NaOH3	CN	

Comments: No SampleSample Team Member Signature: R/LPage of

WATER SAMPLING FORM

HF-FORM-430

Project Name: City of Helena
 Project Code: 1273
 Sample Team Member(s): R, Lane
 Laboratory Used: Energy Labs

Site Designation: HL-06-1
 Sample Code Number: HL-0906-113
 Sample Date: 06/10/09
 Sample Time: 1020 (military)

**If Duplicate Sample Collected,
Please Record Below**

Duplicate Sample Code #: Duplicate Sample Time: **Site Conditions**

New Site: Yes ☐ No ☒ Photo taken: Yes ☐ No ☒
 Site Type: DRY surface water process water

monitoring well domestic well adit seep

spring other:

Weather Conditions: calm ☒ breeze windy
 no precip. rain snow
 clear ☒ p. cloudy overcast

Air Temperature: °C 50 °F**For Groundwater Samples**

well volume formula: $V = (TD-SWL) \times (\text{Dia.})^2$
 25

Comments

TD(ft.) 26.5 Pumping Rate gpmSWL (ft.): 19.66 no access/pumpingCasing Diameter (I.D.): 2"Water Volume (V) (gal): 1 V x 3 = (gal) 3MP Description Tap of PVCActual Vol. Removed (gal.) 15

Water Level Recovery: slow moderate rapid

For Surface Water Samples

Flow Method: Marsh-McBirney Volumetric Flume Weir Estimate

Other Flow or Description: Flow: gpm cfs Staff Gage: **Field Parameter Stabilization**

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Turbidity (n.t.u.)	Temperature (°C)	Additional Parameters or Notes
<u>5gal</u>			<u>6.78</u>	<u>1377</u>		<u>11.9</u>	
<u>10gal</u>			<u>6.78</u>	<u>1380</u>		<u>12.1</u>	
<u>15gal</u>			<u>6.78</u>	<u>1385</u>		<u>12.2</u>	

Turbidity: clear moderate
 (circle) slight very

Sample Method: grab composite pump bailer other
 (describe) 12v

Field Parameters

	Sample	Duplicate
ORP (mV)		
DO (mg/l)		
pH	<u>6.78</u>	
SC (µmhos/cm)	<u>1385</u>	
Turbidity (ntu)		
H ₂ O Temp. (°C)	<u>12.2</u>	
Color	<u>Brown</u>	
Other; odor	<u>None</u>	

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
<u>3</u>	<u>40mL</u>	<u>UF</u>	<u>HCL</u>	<u>VOC</u>	
<u>1</u>	<u>250</u>	<u>UF</u>	<u>RAW</u>	<u>Commons</u>	
<u>1</u>	<u>250</u>	<u>F</u>	<u>HNO3</u>	<u>Dis Metals</u>	
<u>1</u>	<u>250</u>	<u>UF</u>	<u>H2SO4</u>	<u>Nut</u>	
<u>1</u>	<u>500</u>	<u>UF</u>	<u>NaOH3</u>	<u>CN</u>	

Comments: R Purged 15gal To Try and Develop
Well Needs To Be Redevleped

Sample Team Member Signature: Rail ZPage of

WATER SAMPLING FORM

HF-FORM-430

Project Name: City of HelenaProject Code: 1273Sample Team Member(s): R. LaneLaboratory Used: Energy LabsSite Designation: HL-90-3Sample Code Number: HL-0906-114Sample Date: 06/10/09Sample Time: 1220 (military)**If Duplicate Sample Collected,
Please Record Below**Duplicate Sample Code #: HL-0906-115Duplicate Sample Time: 1245**Site Conditions**New Site: Yes ☐ No ☒ Photo taken: Yes ☐ No ☒
Site Type: DRY surface water process water

monitoring well domestic well adit seep

spring other:

Weather Conditions: calm breeze windy
no precip rain snow
clear p. cloudy overcastAir Temperature: 65 °C 65 °F**For Groundwater Samples**well volume formula: $V = (TD-SWL) \times (\text{Dia.}^2) / 25$

Comments

TD (ft.) 39 Pumping Rate _____ gpmSWL (ft.) 66.54 no access/pumpingCasing Diameter (I.D.) 4"Water Volume (V) (gal): 8 V x 3 = (gal) 24MP Description Top of PVCActual Vol. Removed (gal.) 30Water Level Recovery: slow moderate rapid**For Surface Water Samples**Flow Method: Marsh McBirney Volumetric Flume Weir Estimate

Other Flow or Description: _____

Flow: _____ gpm cfs Staff Gage: _____

Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Turbidity (n.t.u.)	Temperature (°C)	Additional Parameters or Notes
<u>10:01</u>			<u>7.27</u>	<u>1203</u>		<u>11.3</u>	
<u>20:01</u>			<u>7.21</u>	<u>1202</u>		<u>11.3</u>	
<u>30:01</u>			<u>7.19</u>	<u>1203</u>		<u>11.3</u>	

Turbidity: clear moderate
(circle) slight verySample Method: grab composite pump bailer other
(describe) 120**Field Parameters**

Sample Duplicate

ORP (mV)		
DO (mg/l)		
pH	<u>7.19</u>	
SC (µmhos/cm)	<u>1203</u>	
Turbidity (ntu)		
H ₂ O Tmp. (°C)	<u>11.3</u>	
Color	<u>None</u>	
Other; odor	<u>None</u>	

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
<u>3</u>	40mL	UF	HCL	VOC	
<u>1</u>	<u>250X</u>	UF	RAW	Commons	
<u>1</u>	250	F	HNO3	Dis Metals	
<u>1</u>	250	UF	H2SO4	Nut	
<u>1</u>	500	UF	NaOH3	CN	

Comments: _____

Sample Team Member Signature: R. Lane

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STANDARD OPERATING PROCEDURE
WATER SAMPLING FORM

HF-FORM-430

Project Name: City of Helena
 Project Code: 1273
 Sample Team Member(s): R. Lane
 Laboratory Used: Energy Labs

Site Designation: HL-94-3
 Sample Code Number: HL-0906-116
 Sample Date: 06/10/09
 Sample Time: 1315 (military)

**If Duplicate Sample Collected,
Please Record Below**

Duplicate Sample Code #: Duplicate Sample Time: **Site Conditions**

New Site: Yes ☐ No ☒ Photo taken: Yes ☐ No ☒
 Site Type: DRY surface water process water

monitoring well domestic well adit seep

spring other:

Weather Conditions: calm breeze windy
no precip. rain snow
 clear partly cloudy overcast

Air Temperature: 65 °F**For Groundwater Samples**

well volume formula: $V = (TD-SWL) \times (Dia^2) / 25$

Comments

TD (ft.): 69 Pumping Rate gpmSWL (ft.): 37.86 no access/pumpingCasing Diameter (I.D.): 2"Water Volume (V) (gal): 5 V x 3 = (gal) 15MP Description Top of PVCActual Vol. Removed (gal.): 15Water Level Recovery: slow moderate rapid**For Surface Water Samples**Flow Method: Marsh McBirney Volumetric Flume Weir EstimateOther Flow or Description: Flow: gpm cfs Staff Gage: **Field Parameter Stabilization**

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Turbidity (n.t.u.)	Temperature (°C)	Additional Parameters or Notes
<u>5 gal</u>			<u>7.55</u>	<u>985</u>		<u>11.3</u>	
<u>10 gal</u>			<u>7.52</u>	<u>968</u>		<u>11.2</u>	
<u>15 gal</u>			<u>7.48</u>	<u>980</u>		<u>11.1</u>	

Turbidity: clear moderate
 (circle) slight very

Sample Method: grab composite pump bailer other
 (describe) 13V

Field Parameters

	Sample	Duplicate
ORP (mV)		
DO (mg/l)		
pH	<u>7.48</u>	
SC (µmhos/cm)	<u>980</u>	
Turbidity (ntu)		
H ₂ O Tmp. (°C)	<u>11.1</u>	
Color	<u>None</u>	
Other; odor	<u>None</u>	

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
<u>3</u>	<u>40mL</u>	<u>UF</u>	<u>HCL</u>	<u>VOC</u>	
<u>1</u>	<u>250</u>	<u>UF</u>	<u>RAW</u>	<u>Commons</u>	
<u>1</u>	<u>250</u>	<u>F</u>	<u>HNO3</u>	<u>Dis Metals</u>	
<u>1</u>	<u>250</u>	<u>UF</u>	<u>H2SO4</u>	<u>Nut</u>	
<u>1</u>	<u>500</u>	<u>UF</u>	<u>NaOH3</u>	<u>CN</u>	

Comments: Sample Team Member Signature: R. LanePage of

STANDARD OPERATING PROCEDURE

WATER SAMPLING FORM

HF-FORM-430

Project Name: City of HelenaProject Code: 1273Sample Team Member(s): R, LaneLaboratory Used: Energy LabsSite Designation: HL-90-1Sample Code Number: HL-0906-117Sample Date: 06/10/09Sample Time: 1325 (military)

**If Duplicate Sample Collected,
Please Record Below**

Duplicate Sample Code #: _____

Duplicate Sample Time: _____

Site Conditions

New Site: Yes ☐ No ☒ Photo taken: Yes ☐ No ☒
 Site Type: DRY surface water process water

monitoring well domestic well adit seep

spring other: _____

Weather Conditions: calm breeze windy
no precip. rain snow
clear p. cloudy overcast

Air Temperature: _____ °C 65 °F**For Groundwater Samples**

well volume formula: $V = (TD-SWL) \times (\text{Dia.}^2) / 25$

Comments

TD(ft.) 60 Pumping Rate _____ gpmSWL (ft.): 59.10 no access/pumping

Casing Diameter (I.D.): _____

Water Volume (V) (gal): _____ V x 3 = (gal) _____

MP Description _____

Actual Vol. Removed (gal.) _____

Water Level Recovery: slow moderate rapid

For Surface Water SamplesFlow Method: Marsh McBirney Volumetric Flume Weir Estimate

Other Flow or Description: _____

Flow: _____ gpm cfs Staff Gage: _____

Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Turbidity (n.t.u.)	Temperature (°C)	Additional Parameters or Notes

Turbidity: clear moderate
 (circle) slight very

Sample Method: grab composite pump bailer other
 (describe)

Field Parameters

Sample Duplicate

ORP (mV)		
DO (mg/l)		
pH		
SC (µmhos/cm)		
Turbidity (ntu)		
H ₂ O Tmp. (°C)		
Color		
Other; odor		

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
2	40mL	UF	HCL	VOC	
1	L	UF	RAW	Commons	
1	250	F	HNO3	Dis Metals	
1	250	UF	H2SO4	Nut	
1	500	UF	NaOH3	CN	

Comments: Too little water to sampleSample Team Member Signature: Rid 2

Page _____ of _____

HF-FORM-430

Project Name: City of Helena
 Project Code: 1273
 Sample Team Member(s): R. Lane
 Laboratory Used: Energy Labs

Site Designation: MPC-1
 Sample Code Number: HL-0906-118
 Sample Date: 06/10/09
 Sample Time: 1340 (military)

**If Duplicate Sample Collected,
Please Record Below**

Duplicate Sample Code #:
 Duplicate Sample Time:

Site Conditions

New Site: Yes ☐ No ☒ Photo taken: Yes ☐ No ☒
 Site Type: DRY surface water process water
 monitoring well domestic well adit seep
 spring other:
 Weather Conditions: calm breeze windy
 no precip rain snow
 clear p. cloudy overcast
 Air Temperature: °C 68 °F

For Groundwater Samples

well volume formula: $V = (TD-SWL) \times (\text{Dia.}^2) / 25$ Comments
 TD (ft.): 39 Pumping Rate gpm
 SWL (ft.): 24.85 no access/pumping
 Casing Diameter (I.D.): 2"
 Water Volume (V) (gal): 2.3 $V \times 3 = (\text{gal})$ 6.9
 MP Description Top of PVC
 Actual Vol. Removed (gal.): 1.5
 Water Level Recovery: slow moderate rapid

For Surface Water Samples

Flow Method: Marsh McBirney Volumetric Flume Weir Estimate
 Other Flow or Description:
 Flow: gpm cfs Staff Gage:

Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (μmhos/cm)	Turbidity (n.t.u.)	Temperature (°C)	Additional Parameters or Notes
<u>3gal</u>			<u>7.41</u>	<u>1082</u>		<u>9.8</u>	
<u>6gal</u>			<u>7.29</u>	<u>1051</u>		<u>9.6</u>	
<u>10gal</u>			<u>7.20</u>	<u>1066</u>		<u>9.6</u>	

Turbidity: clear moderate
 (circle) slight very

Sample Method: grab composite pump bailer other
 (describe) 12v

Field Parameters

	Sample	Duplicate
ORP (mV)		
DO (mg/l)		
pH	<u>7.20</u>	
SC (μmhos/cm)	<u>1066</u>	
Turbidity (ntu)		
H ₂ O Tmp. (°C)	<u>9.6</u>	
Color	<u>None</u>	
Other; odor	<u>yes</u>	

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
<u>3</u>	40mL	UF	HCL	VOC	
<u>1</u>	<u>250</u>	UF	RAW	Commons	
<u>1</u>	250	F	HNO3	Dis Metals	
<u>1</u>	250	UF	H2SO4	Nut	
<u>1</u>	500	UF	NaOH3	CN	

Comments: Sample Team Member Signature: R. LanePage of

WATER SAMPLING FORM

HF-FORM-430

Project Name: City of Helena

Project Code: 1273

Sample Team Member(s): R. Lane

Laboratory Used: Energy Labs

Site Designation: DI B/LK

Sample Code Number: HL-0906-119

Sample Date: 06/10/09

Sample Time: 1930 (military)

If Duplicate Sample Collected,Please Record Below

Duplicate Sample Code #:

Duplicate Sample Time:

Site ConditionsNew Site: Yes ☐ No ☒ Photo taken: Yes ☐ No ☒
Site Type: DRY surface water process water

monitoring well domestic well adit seep

spring other:

Weather Conditions: ~~calm~~ breeze windy
~~no precip.~~ rain snow
clear ~~p. cloudy~~ overcast

Air Temperature: °C 65 °F

For Groundwater Samples

well volume formula:	$V = (TD-SWL) \times (\text{Dia.}^2) / 25$	Comments
TD (ft.)	Pumping Rate	gpm
SWL (ft.)	no access/pumping	
Casing Diameter (I.D.)		
Water Volume (V) (gal):	$V \times 3 = (\text{gal})$	
MP Description		
Actual Vol. Removed (gal.)		
Water Level Recovery:	slow moderate rapid	

For Surface Water Samples

Flow Method:	Marsh McBirney	Volumetric	Flume	Weir	Estimate
Other Flow or Description:					
Flow:	gpm	cfs	Staff Gage:		

Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (μmhos/cm)	Turbidity (n.t.u.)	Temperature (°C)	Additional Parameters or Notes

Turbidity: clear moderate slight very

Sample Method: ☒ grab composite pump bailer other
(describe)Field Parameters

Sample Duplicate

ORP (mV)		
DO (mg/l)		
pH		
SC (μmhos/cm)		
Turbidity (ntu)		
H ₂ O Tmp. (°C)		
Color		
Other; odor		

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
3	40mL	UF	HCL	VOC	
1	250mL	UF	RAW	Commons	
1	250	F	HNO3	Dis Metals	
1	250	UF	H2SO4	Nut	
1	500	UF	NaOH3	CN	

Comments: Culligan DI water from Canby into Sample Bottles

Sample Team Member Signature: RL

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STANDARD OPERATING PROCEDURE
WATER SAMPLING FORM

HF-FORM-430

Project Name: City of Helena
 Project Code: 1273
 Sample Team Member(s): R, Lane
 Laboratory Used: Energy Labs

Site Designation: EPA-1
 Sample Code Number: HL-0906-120
 Sample Date: 06/11/09
 Sample Time: 0800 (military)

If Duplicate Sample Collected,
Please Record Below

Duplicate Sample Code #: Duplicate Sample Time: Site Conditions

New Site: Yes ☐ No ☒ Photo taken: Yes ☐ No ☒
 Site Type: DRY surface water process water

monitoring well domestic well adit seep

spring other:

Weather Conditions: calm breeze windy
no precip. rain snow
clear p. cloudy overcast

Air Temperature: °C 57 °FFor Groundwater Samples

well volume formula: $V = (TD-SWL) \times (\text{Dia.}^2) / 25$

Comments

TD(ft.) 59 Pumping Rate gpmSWL (ft.) 49.31 no access/pumpingCasing Diameter (I.D.) 2"Water Volume (V) (gal): 1.5 V x 3 = (gal) 4.5MP Description Top of PVCActual Vol. Removed (gal.) 5 gal

Water Level Recovery: slow moderate rapid

For Surface Water SamplesFlow Method: Marsh McBirney Volumetric Flume Weir EstimateOther Flow or Description: Flow: gpm cfs Staff Gage: Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (μmhos/cm)	Turbidity (n.t.u.)	Temperature (°C)	Additional Parameters or Notes
<u>1.5 gal</u>			<u>6.89</u>	<u>1597</u>		<u>11.1</u>	
<u>3.0 gal</u>			<u>6.87</u>	<u>1590</u>		<u>11.1</u>	
<u>5.0 gal</u>			<u>6.87</u>	<u>1592</u>		<u>11.1</u>	

Turbidity: clear moderate
 (circle) slight very

Sample Method: grab composite pump bailer other
 (describe)

Field Parameters

	Sample	Duplicate
ORP (mV)		
DO (mg/l)		
pH	<u>6.87</u>	
SC (μmhos/cm)	<u>1592</u>	
Turbidity (ntu)		
H ₂ O Tmp. (°C)	<u>11.1</u>	
Color	<u>None</u>	
Other; odor	<u>Yes</u>	

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
<u>3</u>	<u>40mL</u>	<u>UF</u>	<u>HCL</u>	<u>VOC</u>	
<u>1</u>	<u>250 X</u>	<u>UF</u>	<u>RAW</u>	<u>Commons</u>	
<u>1</u>	<u>250</u>	<u>F</u>	<u>HNO3</u>	<u>Dis Metals</u>	
<u>1</u>	<u>250</u>	<u>UF</u>	<u>H2SO4</u>	<u>Nut</u>	
<u>1</u>	<u>500</u>	<u>UF</u>	<u>NaOH3</u>	<u>CN</u>	

Comments: Bailed and 1st Recorder.Sample Team Member Signature: R. LanePage of

WATER SAMPLING FORM

HF-FORM-430

Project Name: City of HelenaProject Code: 1273Sample Team Member(s): R, LaneLaboratory Used: Energy LabsSite Designation: MPL-5Sample Code Number: HL-0906-121Sample Date: 06/11/09Sample Time: 0920 (military)For Groundwater SamplesIf Duplicate Sample Collected,
Please Record Below

Duplicate Sample Code #: _____

Duplicate Sample Time: _____

Site ConditionsNew Site: Yes ☐ No ☒ Photo taken: Yes ☐ No ☒
Site Type: DRY surface water process watermonitoring well domestic well adit seep

spring other: _____

Weather Conditions: calm breeze windyno precip. rain snowclear cloudy overcastAir Temperature: _____ °C 60 °F

well volume formula:	$V = (TD-SWL) \times (Dia.^2) / 25$	Comments
TD (ft.)	<u>73.4</u>	Pumping Rate _____ gpm
SWL (ft.)	<u>59.26</u>	no access/pumping
Casing Diameter (I.D.)	<u>2"</u>	
Water Volume (V) (gal.)	<u>2.3</u>	V x 3 = (gal.) <u>6.9</u>
MP Description	<u>Top of PVL</u>	
Actual Vol. Removed (gal.)	<u>7.0</u>	
Water Level Recovery:	slow moderate rapid	

For Surface Water SamplesFlow Method: Marsh McBirney Volumetric Flume Weir Estimate

Other Flow or Description: _____

Flow: _____ gpm cfs Staff Gage: _____

Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Turbidity (n.t.u.)	Temperature (°C)	Additional Parameters or Notes
			<u>6.93</u>	<u>2745</u>		<u>11.9</u>	
			<u>6.92</u>	<u>2757</u>		<u>12.2</u>	
			<u>6.98</u>	<u>2769</u>		<u>12.1</u>	

Turbidity: clear moderate slight verySample Method: grab composite pump bailer other (describe)Field Parameters

Sample Duplicate

ORP (mV)		
DO (mg/l)		
pH	<u>6.98</u>	
SC (µmhos/cm)	<u>2769</u>	
Turbidity (ntu)		
H ₂ O Tmp. (°C)	<u>12.1</u>	
Color	<u>Lt Brown</u>	
Other; odor	<u>Yes Petro</u>	

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
<u>3</u>	<u>40mL</u>	<u>UF</u>	<u>HCL</u>	<u>VOC</u>	
<u>1</u>	<u>250 mL</u>	<u>UF</u>	<u>RAW</u>	<u>Commons</u>	
<u>1</u>	<u>250</u>	<u>F</u>	<u>HNO3</u>	<u>Dis Metals</u>	
<u>1</u>	<u>250</u>	<u>UF</u>	<u>H2SO4</u>	<u>Nut</u>	
<u>1</u>	<u>500</u>	<u>UF</u>	<u>NaOH3</u>	<u>CN</u>	

Comments: _____

Sample Team Member Signature: R. Lane

Page _____ of _____

WATER SAMPLING FORM

HF-FORM-430

Project Name: City of Helena

Project Code: 1273

Sample Team Member(s): R. Lane

Laboratory Used: Energy Labs

Site Designation: HL-99-1

Sample Code Number: HL-0906-122

Sample Date: 06/11/09

Sample Time: 1145 (military)

If Duplicate Sample Collected,
Please Record Below

Duplicate Sample Code #:

Duplicate Sample Time:

Site ConditionsNew Site: Yes ☐ No ☒ Photo taken: Yes ☐ No ☒
Site Type: DRY surface water process water

monitoring well domestic well adit seep

spring other:

Weather Conditions: calm breeze windy
no precip. rain snow
clear cloudy overcast

Air Temperature: °C 60 °F

For Groundwater Sampleswell volume formula: $V = (TD-SWL) \times (\text{Dia.})^2$
25

Comments

TD (ft.) 98 Pumping Rate 7.83 gpm

SWL (ft.): -NA @ 71' no access/pumping

Casing Diameter (I.D.):

Water Volume (V) (gal): V x 3 = (gal)

MP Description

Actual Vol. Removed (gal.):

Water Level Recovery: slow moderate rapid

For Surface Water Samples

Flow Method: Marsh McBirney Volumetric Flume Weir Estimate

Other Flow or Description:

Flow: gpm cfs Staff Gage:

Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Turbidity (n.t.u.)	Temperature (°C)	Additional Parameters or Notes

Turbidity: (circle) clear moderate
slight verySample Method: (describe) grab composite pump bailer other
DedField Parameters

	Sample	Duplicate
ORP (mV)		
DO (mg/l)		
pH	7.16	
SC (µmhos/cm)	1243	
Turbidity (ntu)		
H ₂ O Tmp. (°C)	11.78	
Color	None	
Other; odor	None	

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
3	40mL	UF	HCL	VOC	
1	250	UF	RAW	Commons	
1	250	F	HNO3	Dis Metals	
1	250	UF	H2SO4	Nut	
1	500	UF	NaOH3	CN	

Comments:

Sample Team Member Signature: Phil V

Page of

Project Name: City of HelenaProject Code: 1273Sample Team Member(s): R, LaneLaboratory Used: Energy LabsSite Designation: HL-44-2Sample Code Number: HL-0906-123Sample Date: 06/11/09Sample Time: 1230 (military)If Duplicate Sample Collected,
Please Record Below

Duplicate Sample Code #:

Duplicate Sample Time:

Site ConditionsNew Site: Yes ☐ No ☒ Photo taken: Yes ☐ No ☒
Site Type: DRY surface water process water

monitoring well domestic well adit seep

spring other:

Weather Conditions: calm breeze windyno precip. rain snowclear p. cloudy overcastAir Temperature: °C 62 °FFor Groundwater Sampleswell volume formula: $V = (TD-SWL) \times (\text{Dia.}^2)$
25

Comments

TD (ft.): 118 Pumping Rate NA gpmSWL (ft.): 88.95 no access/pumping

Casing Diameter (I.D.):

Water Volume (V) (gal): V x 3 = (gal)

MP Description

Actual Vol. Removed (gal):

Water Level Recovery: slow moderate rapid

For Surface Water SamplesFlow Method: Marsh McBirney Volumetric Flume Weir Estimate

Other Flow or Description:

Flow: gpm cfs Staff Gage:

Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Turbidity (n.t.u.)	Temperature (°C)	Additional Parameters or Notes

Turbidity: clear moderate
(circle) slight verySample Method: grab composite pump bailer other
(describe) RedField Parameters

Sample Duplicate

ORP (mV)

DO (mg/l)

pH

SC (µmhos/cm)

Turbidity (ntu)

H₂O Temp. (°C)

Color

Other; odor

<u>7.35</u>	
<u>859</u>	
<u>11.9</u>	
<u>None</u>	
<u>None</u>	

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
<u>3</u>	40mL	UF	HCL	VOC	
<u>1</u>	<u>250</u>	UF	RAW	Commons	
<u>1</u>	250	F	HNO3	Dis Metals	
<u>1</u>	250	UF	H2SO4	Nut	
<u>1</u>	500	UF	NaOH3	CN	

Comments:

Sample Team Member Signature: RL2

Page of

WATER SAMPLING FORM

HF-FORM-430

Project Name: City of HelenaProject Code: 1273Sample Team Member(s): R. LaneLaboratory Used: Energy LabsSite Designation: HL-99-3Sample Code Number: HL-0906-124Sample Date: 06/11/09Sample Time: 1300 (military)For Groundwater SamplesIf Duplicate Sample Collected,
Please Record Below

Duplicate Sample Code #:

Duplicate Sample Time:

Site ConditionsNew Site: Yes ☐ No ☒ Photo taken: Yes ☐ No ☒
Site Type: DRY surface water process water

monitoring well domestic well adit seep

spring other:

Weather Conditions: calm breeze windyno precip. rain snowclear cloudy overcastAir Temperature: °C 62 °Fwell volume formula: $V = (TD-SWL) \times (\text{Dia.}^2) / 25$

Comments

TD (ft.) 105 Pumping Rate 32.8 gpmSWL (ft.): 73.22 no access/pumping

Casing Diameter (I.D.):

Water Volume (V) (gal): V x 3 = (gal)

MP Description

Actual Vol. Removed (gal):

Water Level Recovery: slow moderate rapid

For Surface Water Samples

Flow Method: Marsh-McBirney Volumetric Flume Weir Estimate

Other Flow or Description:

Flow: gpm cfs Staff Gage:

Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Turbidity (n.t.u.)	Temperature (°C)	Additional Parameters or Notes

Turbidity: clear moderate
(circle) slight verySample Method: grab composite pump bailer other
(describe) RedField Parameters

	Sample	Duplicate
ORP (mV)		
DO (mg/l)		
pH	<u>7.30</u>	
SC (µmhos/cm)	<u>949</u>	
Turbidity (ntu)		
H ₂ O Tmp. (°C)	<u>11.5</u>	
Color	<u>None</u>	
Other; odor	<u>None</u>	

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
2	40mL	UF	HCL	VOC	
1	L	UF	RAW	Commons	
1	250	F	HNO3	Dis Metals	
1	250	UF	H2SO4	Nut	
1	500	UF	NaOH3	CN	

Comments:

Sample Team Member Signature: R. Lane

Page of

HF-FORM-430

Project Name: City of Helena

Project Code: 1273

Sample Team Member(s): R. Lane

Laboratory Used: Energy Labs

Site Designation: Rinsate 13/knk

Sample Code Number: HL-0906-125

Sample Date: 06/11/09

Sample Time: 1345 (military)

If Duplicate Sample Collected,
Please Record Below

Duplicate Sample Code #:

Duplicate Sample Time:

Site Conditions

New Site: Yes ☐ No ☒ Photo taken: Yes ☐ No ☒
Site Type: DRY surface water process water

monitoring well domestic well adit seep

spring other:

Weather Conditions: calm breeze windy
no precip. rain snow
clear p. cloudy overcast

Air Temperature: °C 65 °F

For Groundwater Samples

well volume formula:	$V = (TD-SWL) \times (\text{Dia.}^2) / 25$	Comments
TD(ft.)	Pumping Rate	gpm
SWL (ft.)	no access/pumping	
Casing Diameter (I.D.)		
Water Volume (V) (gal):	$V \times 3 = (\text{gal})$	
MP Description		
Actual Vol. Removed (gal.)		
Water Level Recovery:	slow moderate rapid	

For Surface Water Samples

Flow Method:	Marsh McBiney	Volumetric	Flume	Weir	Estimate
Other Flow or Description:					
Flow:	gpm	cfs	Staff Gage:		

Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Turbidity (n.t.u.)	Temperature (°C)	Additional Parameters or Notes

Turbidity: clear moderate slight very

Sample Method: grab composite pump bailer other
(describe) 120

Field Parameters

Sample Duplicate

ORP (mV)	
DO (mg/l)	
pH	
SC (µmhos/cm)	
Turbidity (ntu)	
H ₂ O Tmp. (°C)	
Color	
Other; odor	

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
3	40mL	UF	HCL	VOC	
1	250	UF	RAW	Commons	
1	250	F	HNO3	Dis Metals	
1	250	UF	H2SO4	Nut	
1	500	UF	NaOH3	CN	

Comments: DT Water Run Through Pump System and Sampled.

Sample Team Member Signature: [Signature]

Page of

Personnel: R Lane

°C

MSG Type: _____
S/N: _____
Time: _____
Calibration Result: _____

[illegible]

Time	Buffer	Temperature	Reading (Temp Corrected)
07:08	4	16.5	4.00
07:05	7	16.7	7.00
07:12	10	16.5	9.96
Calibration check:			

Meter Type:		SN:		
Time	Standard	Temperature	Reading (Temp Corrected)	Cell Factor
07:00	1413	16.8	1413	—
Calibration check:				

Major Type		Sub Type		Material	
Search Criteria					
Year	Search Area		Condition	Rating	Notes
	Area 1	Area 2			
Additional Notes					

[illegible]

STANDARD OPERATING PROCEDURE INSTRUMENT CALIBRATION FORM HF-FORM-500

Project Name: City of HelenaProject Number: 1273Date: 06/9/09Personnel: R Lane**Weather Conditions:**

calm	breeze	windy
no precip	rain	snow
clear	p. cloudy	overcast

IN LAB

Air Temperature:

°F

°C

Dissolved Oxygen

Meter Type:	
SN:	
Time:	
Calibration Results:	

Redox Potential (Eh)

Meter Type:	
SN:	
Time:	
Calibration Results:	

pHMeter Type: YSISN: 04K17594AF

Time	Buffer	Temperature	Reading (Temp Corrected)
07:43	4	15.6	4.00
07:40	7	15.6	7.00
07:50	10	15.6	9.98
Calibration check:			

Specific Conductance

Meter Type:	SN:			
Time	Standard	Temperature	Reading (Temp Corrected)	Cell Factor
07:35	1413	15.4	1413	—
Calibration check:				

Turbidity

PID/FID

Notes/Additional Information:

CHAIN OF CUSTODY RECORD

3020 Bozeman Avenue • Helena, Montana 59601 • (406) 443-4150

PROJ. NO. 1273		PROJECT NAME City of Helena			NO. 6/11/09 1330	OF	CON-	TAINERS	Commons UF/BAW Nutrients UF/H₂SO₄ Diss. Metal F/HNO₃ CN UF/NaOH Total Metals UF/HNO₃ Total Recoverable Metals UF/HNO₃ BTEX TPH VOL. PCO AT HEL LABORATORY															REMARKS											
SAMPLERS: (Signature) R. J. Z.																																			
DATE	TIME	COMP	GRAB	SAMPLE NUMBER																															
6/11/09	0800		X	HL-0906-120	7	X	X	X	X								X																		
	0920			121																															
	1145			122																															
	1230			123																															
	1300			124																															
	1345			125																															

Relinquished (Signature) R. J. Z.		Date/Time 6/12/09 8:50		Received by (Signature) W. J. Z.		Lab Emergen Lab		P.O. # HL001831		Shipped via: Bus, Fed Ex, UPS Other: _____ Air Bill # _____	
Relinquished (Signature)		Date/Time		Received by (Signature)		Remarks Temp - 0.9					
Relinquished (Signature)		Date/Time		Received for Laboratory by (Signature)		Date/Time		Enclosed: ☐ Parameter sheet w/ detection limits ☐ QA/QC standard mixing instructions ☐ Cover letter ☐ Other _____			
						Split Samples: ☐ Accepted ☐ Declined		Signature _____			



3020 Bozeman Avenue • Helena, Montana 59601 • (406) 443-4150

[illegible]

CHAIN OF CUSTODY RECORD

PROJ. NO.		PROJECT NAME		NO OF CON- TAINERS	ANALYSIS PARAMETERS												REMARKS
SAMPLERS: (Signature)					Commons UF/RAW	Nutrients UF/H ₂ SO ₄	Diss. Metal F/HNO ₃	CN UF/NaOH	Total Metals UF/HNO ₃	Total Recoverable Metals UF/HNO ₃	BTEX	TPH	VOCs 2 ug/l	SVOCs 1 ug/l	PCBs 0.1 ug/l		
DATE	TIME	COMP	GRAB		SAMPLE NUMBER												
6/4/04	0845		X	HL-0906-100	3								X			* Same	
	1030			101												As Historically	
	1010			102													
	1130			103													
	1300			104													
	1310			105													
	1320			106													
	1320			107													
6/10/04	0750			109													
Relinquished (Signature)		Date/Time		Received by (Signature)		Lab		P.O. #		Shipped via: Bus, Fed/Ex, UPS							
[Signature]		6/10/04 15:34		[Signature]		Energy Labs		HLN09831		Other: _____ Air Bill # _____							
Relinquished (Signature)		Date/Time		Received by (Signature)		Remarks											
[Signature]		[Blank]		[Blank]		17°C pccd											
Relinquished (Signature)		Date/Time		Received for Laboratory by (Signature)		Date/Time		Enclosed: ☒ Parameter sheet w/detection limits ☒ QA/QC standard mixing instructions ☐ Cover letter ☒ Other _____									
[Signature]		[Blank]		[Blank]		[Blank]		Split Samples: ☐ Accepted ☐ Declined Signature: _____									

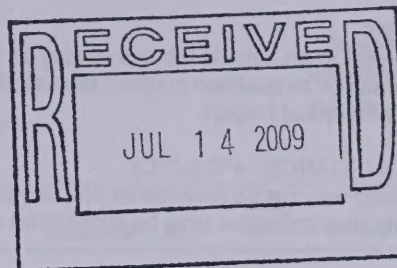
APPENDIX 4



ANALYTICAL SUMMARY REPORT

July 01, 2009

Richard Lane
Hydrometrics Inc-Helena
3020 Bozeman Ave
Helena, MT 59601-



Workorder No.: H09060177

Project Name: 1273 City of Helena

Energy Laboratories Inc received the following 18 samples for Hydrometrics Inc-Helena on 6/10/2009 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H09060177-001	HL-0906-100	06/09/09 8:45	06/10/09	Aqueous	8260-Volatile Organic Comp, 40 CFR Part 258 App I
H09060177-002	HL-0906-101	06/09/09 10:30	06/10/09	Aqueous	Same As Above
H09060177-003	HL-0906-102	06/09/09 10:10	06/10/09	Aqueous	Same As Above
H09060177-004	HL-0906-103	06/09/09 11:30	06/10/09	Aqueous	Same As Above
H09060177-005	HL-0906-104	06/09/09 13:00	06/10/09	Aqueous	Same As Above
H09060177-006	HL-0906-105	06/09/09 13:10	06/10/09	Aqueous	Same As Above
H09060177-007	HL-0906-106	06/09/09 13:20	06/10/09	Aqueous	Same As Above
H09060177-008	HL-0906-107	06/09/09 13:20	06/10/09	Aqueous	Same As Above
H09060177-009	HL-0906-108	06/09/09 13:50	06/10/09	Aqueous	Same As Above
H09060177-010	HL-0906-109	06/10/09 7:50	06/10/09	Aqueous	Same As Above
H09060177-011	HL-0906-110	06/10/09 8:35	06/10/09	Aqueous	Metals by ICP/ICPMS, Dissolved Cyanide, Total Manual Distillation Total Cyanide Digestion Chemical Oxygen Demand Conductivity Anions by Ion Chromatography Nitrogen, Nitrate + Nitrite pH 8260-Volatile Organic Comp, 40 CFR Part 258 App I
H09060177-012	HL-0906-111	06/10/09 9:45	06/10/09	Aqueous	Same As Above
H09060177-013	HL-0906-113	06/10/09 10:20	06/10/09	Aqueous	Same As Above
H09060177-014	HL-0906-114	06/10/09 12:20	06/10/09	Aqueous	Same As Above
H09060177-015	HL-0906-115	06/10/09 12:45	06/10/09	Aqueous	Same As Above
H09060177-016	HL-0906-116	06/10/09 13:15	06/10/09	Aqueous	Same As Above
H09060177-017	HL-0906-118	06/10/09 13:40	06/10/09	Aqueous	Same As Above
H09060177-018	HL-0906-119	06/10/09 14:30	06/10/09	Aqueous	Same As Above

BRANCH LABORATORY LOCATIONS

eli-b - Energy Laboratories, Inc. - Billings, MT, EPA # MT00005
eli-c - Energy Laboratories, Inc. - Casper, WY, EPA# WY00002
eli-g - Energy Laboratories, Inc. - Gillette, WY, EPA# WY00006
eli-h - Energy Laboratories, Inc. - Helena, MT, EPA# MT00945
eli-r - Energy Laboratories, Inc. - Rapid City, SD, EPA# SD00012
eli-t - Energy Laboratories, Inc. - College Station, TX, EPA# TX01520

JUL 10 2009



ANALYTICAL SUMMARY REPORT

SUBCONTRACTING ANALYSIS

Subcontracting of sample analyses to an outside laboratory may be required. If so, ENERGY LABORATORIES, INC. will utilize its branch laboratories or qualified contract laboratories for this service. Any such laboratories are indicated within the Laboratory Analytical Report.

SAMPLE TEMPERATURE COMPLIANCE: 4°C (±2°C)

Temperature of samples received may not be considered properly preserved by accepted standards. Samples that are hand delivered immediately after collection shall be considered acceptable if there is evidence that the chilling process has begun.

ELI appreciates the opportunity to provide you with this analytical service. For additional information, including certifications, and analytical services visit our web page www.energylab.com.

Report Approved By: *[Signature]*



LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060177-001
Client Sample ID: HL-0906-100

*Infiltration
Gallery*

Report Date: 07/01/09
Collection Date: 06/09/09 08:45
Date Received: 06/10/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	06/12/09 18:21 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	06/12/09 18:21 / abb
Benzene	ND	ug/L		1.0		SW8260B	06/12/09 18:21 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	06/12/09 18:21 / abb
Bromodichloromethane	ND	ug/L		1.0		SW8260B	06/12/09 18:21 / abb
Bromoform	ND	ug/L		1.0		SW8260B	06/12/09 18:21 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	06/12/09 18:21 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	06/12/09 18:21 / abb
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	06/12/09 18:21 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	06/12/09 18:21 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	06/12/09 18:21 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	06/12/09 18:21 / abb
Chloroform	0.27	ug/L	J	1.0		SW8260B	06/12/09 18:21 / abb
Chloromethane	ND	ug/L		1.0		SW8260B	06/12/09 18:21 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	06/12/09 18:21 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	06/12/09 18:21 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	06/12/09 18:21 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/12/09 18:21 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/12/09 18:21 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	06/12/09 18:21 / abb
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	06/12/09 18:21 / abb
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	06/12/09 18:21 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	06/12/09 18:21 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	06/12/09 18:21 / abb
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	06/12/09 18:21 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	06/12/09 18:21 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	06/12/09 18:21 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/12/09 18:21 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/12/09 18:21 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	06/12/09 18:21 / abb
2-Hexanone	ND	ug/L		20		SW8260B	06/12/09 18:21 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	06/12/09 18:21 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	06/12/09 18:21 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	06/12/09 18:21 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	06/12/09 18:21 / abb
Styrene	ND	ug/L		1.0		SW8260B	06/12/09 18:21 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/12/09 18:21 / abb
1,1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/12/09 18:21 / abb
Tetrachloroethene	ND	ug/L		1.0		SW8260B	06/12/09 18:21 / abb
Toluene	ND	ug/L		1.0		SW8260B	06/12/09 18:21 / abb
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	06/12/09 18:21 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	06/12/09 18:21 / abb
Trichloroethene	ND	ug/L		1.0		SW8260B	06/12/09 18:21 / abb

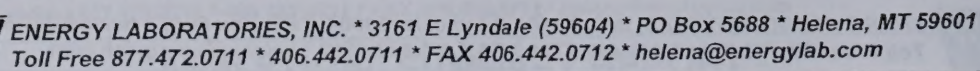
Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

Definitions: QCL - Quality control limit.

ND - Not detected at the reporting limit.

J - Estimated value. The analyte was present but less than the reporting limit.



Infiltration
Gall - x

Report Date: 07/01/09
Collection Date: 06/09/09 08:45
DateReceived: 06/10/09
Matrix: Aqueous

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060177-002
Client Sample ID: HL-0906-101

Report Date: 07/01/09
Collection Date: 06/09/09 10:30
Date Received: 06/10/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	06/12/09 18:50 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	06/12/09 18:50 / abb
Benzene	ND	ug/L		1.0		SW8260B	06/12/09 18:50 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	06/12/09 18:50 / abb
Bromodichloromethane	ND	ug/L		1.0		SW8260B	06/12/09 18:50 / abb
Bromoform	ND	ug/L		1.0		SW8260B	06/12/09 18:50 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	06/12/09 18:50 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	06/12/09 18:50 / abb
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	06/12/09 18:50 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	06/12/09 18:50 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	06/12/09 18:50 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	06/12/09 18:50 / abb
Chloroform	ND	ug/L		1.0		SW8260B	06/12/09 18:50 / abb
Chloromethane	ND	ug/L		1.0		SW8260B	06/12/09 18:50 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	06/12/09 18:50 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	06/12/09 18:50 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	06/12/09 18:50 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/12/09 18:50 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/12/09 18:50 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	06/12/09 18:50 / abb
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	06/12/09 18:50 / abb
1,1-Dichloroethane	0.85	ug/L	J	1.0		SW8260B	06/12/09 18:50 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	06/12/09 18:50 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	06/12/09 18:50 / abb
cis-1,2-Dichloroethene	0.38	ug/L	J	1.0		SW8260B	06/12/09 18:50 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	06/12/09 18:50 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	06/12/09 18:50 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/12/09 18:50 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/12/09 18:50 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	06/12/09 18:50 / abb
2-Hexanone	ND	ug/L		20		SW8260B	06/12/09 18:50 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	06/12/09 18:50 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	06/12/09 18:50 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	06/12/09 18:50 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	06/12/09 18:50 / abb
Styrene	ND	ug/L		1.0		SW8260B	06/12/09 18:50 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/12/09 18:50 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/12/09 18:50 / abb
Tetrachloroethene	ND	ug/L		1.0		SW8260B	06/12/09 18:50 / abb
Toluene	ND	ug/L		1.0		SW8260B	06/12/09 18:50 / abb
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	06/12/09 18:50 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	06/12/09 18:50 / abb
Trichloroethene	0.46	ug/L	J	1.0		SW8260B	06/12/09 18:50 / abb

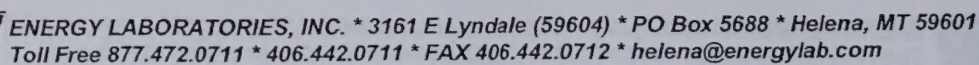
Report RL - Analyte reporting limit.

Definitions: QCL - Quality control limit.

J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



MPC-2

Report Date: 07/01/09
Collection Date: 06/09/09 10:30
DateReceived: 06/10/09
Matrix: Aqueous

Report	RL - Analyte reporting limit.	MCL - Maximum contaminant level.
Definitions:	QCL - Quality control limit.	ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060177-003
Client Sample ID: HL-0906-102

Res #16

Report Date: 07/01/09
Collection Date: 06/09/09 10:10
Date Received: 06/10/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	06/12/09 19:20 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	06/12/09 19:20 / abb
Benzene	ND	ug/L		1.0		SW8260B	06/12/09 19:20 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	06/12/09 19:20 / abb
Bromodichloromethane	ND	ug/L		1.0		SW8260B	06/12/09 19:20 / abb
Bromoform	ND	ug/L		1.0		SW8260B	06/12/09 19:20 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	06/12/09 19:20 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	06/12/09 19:20 / abb
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	06/12/09 19:20 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	06/12/09 19:20 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	06/12/09 19:20 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	06/12/09 19:20 / abb
Chloroform	1.4	ug/L		1.0		SW8260B	06/12/09 19:20 / abb
Chloromethane	ND	ug/L		1.0		SW8260B	06/12/09 19:20 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	06/12/09 19:20 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	06/12/09 19:20 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	06/12/09 19:20 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/12/09 19:20 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/12/09 19:20 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	06/12/09 19:20 / abb
Dichlorodifluoromethane	0.50	ug/L	J	1.0		SW8260B	06/12/09 19:20 / abb
1,1-Dichloroethane	0.19	ug/L	J	1.0		SW8260B	06/12/09 19:20 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	06/12/09 19:20 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	06/12/09 19:20 / abb
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	06/12/09 19:20 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	06/12/09 19:20 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	06/12/09 19:20 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/12/09 19:20 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/12/09 19:20 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	06/12/09 19:20 / abb
2-Hexanone	ND	ug/L		20		SW8260B	06/12/09 19:20 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	06/12/09 19:20 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	06/12/09 19:20 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	06/12/09 19:20 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	06/12/09 19:20 / abb
Styrene	ND	ug/L		1.0		SW8260B	06/12/09 19:20 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/12/09 19:20 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/12/09 19:20 / abb
Tetrachloroethene	1.5	ug/L		1.0		SW8260B	06/12/09 19:20 / abb
Toluene	ND	ug/L		1.0		SW8260B	06/12/09 19:20 / abb
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	06/12/09 19:20 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	06/12/09 19:20 / abb
Trichloroethene	0.21	ug/L	J	1.0		SW8260B	06/12/09 19:20 / abb

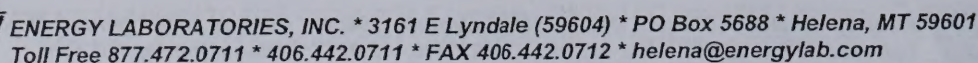
Report RL - Analyte reporting limit.

Definitions: QCL - Quality control limit.

J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



R₁₅ #16

Report Date: 07/01/09
Collection Date: 06/09/09 10:10
DateReceived: 06/10/09
Matrix: Aqueous

Report	RL - Analyte reporting limit.	MCL - Maximum contaminant level.
Definitions:	QCL - Quality control limit.	ND - Not detected at the reporting limit.
	J - Estimated value. The analyte was present but less than the reporting limit.	



LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060177-004
Client Sample ID: HL-0906-103

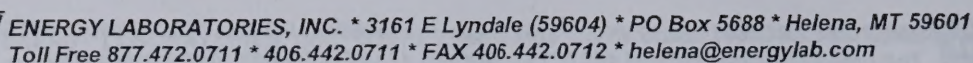
Report Date: 07/01/09
Collection Date: 06/09/09 11:30
Date Received: 06/10/09
Matrix: Aqueous

Res #5

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	06/13/09 18:45 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	06/13/09 18:45 / abb
Benzene	ND	ug/L		1.0		SW8260B	06/13/09 18:45 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	06/13/09 18:45 / abb
Bromodichloromethane	ND	ug/L		1.0		SW8260B	06/13/09 18:45 / abb
Bromoform	ND	ug/L		1.0		SW8260B	06/13/09 18:45 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	06/13/09 18:45 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	06/13/09 18:45 / abb
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	06/13/09 18:45 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	06/13/09 18:45 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	06/13/09 18:45 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	06/13/09 18:45 / abb
Chloroform	2.4	ug/L		1.0		SW8260B	06/13/09 18:45 / abb
Chloromethane	ND	ug/L		1.0		SW8260B	06/13/09 18:45 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	06/13/09 18:45 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	06/13/09 18:45 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	06/13/09 18:45 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/13/09 18:45 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/13/09 18:45 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	06/13/09 18:45 / abb
Dichlorodifluoromethane	0.56	ug/L	J	1.0		SW8260B	06/13/09 18:45 / abb
1,1-Dichloroethane	0.80	ug/L	J	1.0		SW8260B	06/13/09 18:45 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	06/13/09 18:45 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	06/13/09 18:45 / abb
cis-1,2-Dichloroethene	0.30	ug/L	J	1.0		SW8260B	06/13/09 18:45 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	06/13/09 18:45 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	06/13/09 18:45 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/13/09 18:45 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/13/09 18:45 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	06/13/09 18:45 / abb
2-Hexanone	ND	ug/L		20		SW8260B	06/13/09 18:45 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	06/13/09 18:45 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	06/13/09 18:45 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	06/13/09 18:45 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	06/13/09 18:45 / abb
Styrene	ND	ug/L		1.0		SW8260B	06/13/09 18:45 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/13/09 18:45 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/13/09 18:45 / abb
Tetrachloroethene	3.6	ug/L		1.0		SW8260B	06/13/09 18:45 / abb
Toluene	ND	ug/L		1.0		SW8260B	06/13/09 18:45 / abb
1,1,1-Trichloroethane	0.45	ug/L	J	1.0		SW8260B	06/13/09 18:45 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	06/13/09 18:45 / abb
Trichloroethene	0.55	ug/L	J	1.0		SW8260B	06/13/09 18:45 / abb

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



R. 5 #5

Report Date: 07/01/09
Collection Date: 06/09/09 11:30
DateReceived: 06/10/09
Matrix: Aqueous

Report	RL - Analyte reporting limit.	MCL - Maximum contaminant level.
Definitions:	QCL - Quality control limit.	ND - Not detected at the reporting limit.
	J - Estimated value. The analyte was present but less than the reporting limit.	



LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060177-005
Client Sample ID: HL-0906-104

Report Date: 07/01/09
Collection Date: 06/09/09 13:00
Date Received: 06/10/09
Matrix: Aqueous

Res # 40

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	06/13/09 19:14 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	06/13/09 19:14 / abb
Benzene	ND	ug/L		1.0		SW8260B	06/13/09 19:14 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	06/13/09 19:14 / abb
Bromodichloromethane	0.19	ug/L	J	1.0		SW8260B	06/13/09 19:14 / abb
Bromoform	ND	ug/L		1.0		SW8260B	06/13/09 19:14 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	06/13/09 19:14 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	06/13/09 19:14 / abb
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	06/13/09 19:14 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	06/13/09 19:14 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	06/13/09 19:14 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	06/13/09 19:14 / abb
Chloroform	3.8	ug/L		1.0		SW8260B	06/13/09 19:14 / abb
Chloromethane	ND	ug/L		1.0		SW8260B	06/13/09 19:14 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	06/13/09 19:14 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	06/13/09 19:14 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	06/13/09 19:14 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/13/09 19:14 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/13/09 19:14 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	06/13/09 19:14 / abb
Dichlorodifluoromethane	0.62	ug/L	J	1.0		SW8260B	06/13/09 19:14 / abb
1,1-Dichloroethane	0.64	ug/L	J	1.0		SW8260B	06/13/09 19:14 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	06/13/09 19:14 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	06/13/09 19:14 / abb
cis-1,2-Dichloroethene	0.81	ug/L	J	1.0		SW8260B	06/13/09 19:14 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	06/13/09 19:14 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	06/13/09 19:14 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/13/09 19:14 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/13/09 19:14 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	06/13/09 19:14 / abb
2-Hexanone	ND	ug/L		20		SW8260B	06/13/09 19:14 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	06/13/09 19:14 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	06/13/09 19:14 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	06/13/09 19:14 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	06/13/09 19:14 / abb
Styrene	ND	ug/L		1.0		SW8260B	06/13/09 19:14 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/13/09 19:14 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/13/09 19:14 / abb
Tetrachloroethene	2.6	ug/L		1.0		SW8260B	06/13/09 19:14 / abb
Toluene	ND	ug/L		1.0		SW8260B	06/13/09 19:14 / abb
1,1,1-Trichloroethane	0.17	ug/L	J	1.0		SW8260B	06/13/09 19:14 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	06/13/09 19:14 / abb
Trichloroethene	0.48	ug/L	J	1.0		SW8260B	06/13/09 19:14 / abb

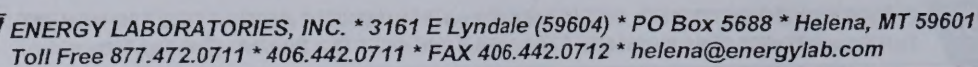
Report RL - Analyte reporting limit.

Definitions: QCL - Quality control limit.

J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Report Date: 07/01/09
Collection Date: 06/09/09 13:00
DateReceived: 06/10/09
Matrix: Aqueous

Ros #40

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Trichlorofluoromethane	0.19	ug/L	J	1.0		SW8260B	06/13/09 19:14 / abb
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	06/13/09 19:14 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	06/13/09 19:14 / abb
Vinyl chloride	ND	ug/L		1.0		SW8260B	06/13/09 19:14 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	06/13/09 19:14 / abb
o-Xylene	ND	ug/L		1.0		SW8260B	06/13/09 19:14 / abb
Xylenes, Total	ND	ug/L		1.0		SW8260B	06/13/09 19:14 / abb
Surr: 1,2-Dichloroethane-d4	103	%REC		70-130		SW8260B	06/13/09 19:14 / abb
Surr: Dibromofluoromethane	86.0	%REC		70-130		SW8260B	06/13/09 19:14 / abb
Surr: p-Bromofluorobenzene	104	%REC		70-130		SW8260B	06/13/09 19:14 / abb
Surr: Toluene-d8	112	%REC		70-130		SW8260B	06/13/09 19:14 / abb

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060177-006
Client Sample ID: HL-0906-105

Report Date: 07/01/09
Collection Date: 06/09/09 13:10
Date Received: 06/10/09
Matrix: Aqueous

Ros #57

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	06/13/09 19:43 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	06/13/09 19:43 / abb
Benzene	ND	ug/L		1.0		SW8260B	06/13/09 19:43 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	06/13/09 19:43 / abb
Bromodichloromethane	ND	ug/L		1.0		SW8260B	06/13/09 19:43 / abb
Bromoform	ND	ug/L		1.0		SW8260B	06/13/09 19:43 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	06/13/09 19:43 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	06/13/09 19:43 / abb
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	06/13/09 19:43 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	06/13/09 19:43 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	06/13/09 19:43 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	06/13/09 19:43 / abb
Chloroform	2.8	ug/L		1.0		SW8260B	06/13/09 19:43 / abb
Chloromethane	ND	ug/L		1.0		SW8260B	06/13/09 19:43 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	06/13/09 19:43 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	06/13/09 19:43 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	06/13/09 19:43 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/13/09 19:43 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/13/09 19:43 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	06/13/09 19:43 / abb
Dichlorodifluoromethane	0.77	ug/L	J	1.0		SW8260B	06/13/09 19:43 / abb
1,1-Dichloroethane	0.24	ug/L	J	1.0		SW8260B	06/13/09 19:43 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	06/13/09 19:43 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	06/13/09 19:43 / abb
cis-1,2-Dichloroethene	0.22	ug/L	J	1.0		SW8260B	06/13/09 19:43 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	06/13/09 19:43 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	06/13/09 19:43 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/13/09 19:43 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/13/09 19:43 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	06/13/09 19:43 / abb
2-Hexanone	ND	ug/L		20		SW8260B	06/13/09 19:43 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	06/13/09 19:43 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	06/13/09 19:43 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	06/13/09 19:43 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	06/13/09 19:43 / abb
Styrene	ND	ug/L		1.0		SW8260B	06/13/09 19:43 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/13/09 19:43 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/13/09 19:43 / abb
Tetrachloroethene	1.8	ug/L		1.0		SW8260B	06/13/09 19:43 / abb
Toluene	ND	ug/L		1.0		SW8260B	06/13/09 19:43 / abb
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	06/13/09 19:43 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	06/13/09 19:43 / abb
Trichloroethene	0.28	ug/L	J	1.0		SW8260B	06/13/09 19:43 / abb

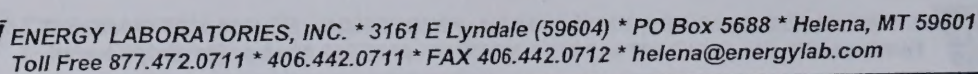
Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

Definitions: QCL - Quality control limit.

ND - Not detected at the reporting limit.

J - Estimated value. The analyte was present but less than the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060177-006
Client Sample ID: HL-0906-105

Report Date: 07/01/09
Collection Date: 06/09/09 13:10
DateReceived: 06/10/09
Matrix: Aqueous

Res #57

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Trichlorofluoromethane	0.25	ug/L	J	1.0		SW8260B	06/13/09 19:43 / abb
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	06/13/09 19:43 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	06/13/09 19:43 / abb
Vinyl chloride	ND	ug/L		1.0		SW8260B	06/13/09 19:43 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	06/13/09 19:43 / abb
o-Xylene	ND	ug/L		1.0		SW8260B	06/13/09 19:43 / abb
Xylenes, Total	ND	ug/L		1.0		SW8260B	06/13/09 19:43 / abb
Surr: 1,2-Dichloroethane-d4	100	%REC		70-130		SW8260B	06/13/09 19:43 / abb
Surr: Dibromofluoromethane	88.0	%REC		70-130		SW8260B	06/13/09 19:43 / abb
Surr: p-Bromofluorobenzene	105	%REC		70-130		SW8260B	06/13/09 19:43 / abb
Surr: Toluene-d8	109	%REC		70-130		SW8260B	06/13/09 19:43 / abb

Report Definitions:

RL - Analyte reporting limit.

QCL - Quality control limit.

J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060177-007
Client Sample ID: HL-0906-106

Report Date: 07/01/09
Collection Date: 06/09/09 13:20
Date Received: 06/10/09
Matrix: Aqueous

Res # 52

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	06/13/09 20:13 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	06/13/09 20:13 / abb
Benzene	ND	ug/L		1.0		SW8260B	06/13/09 20:13 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	06/13/09 20:13 / abb
Bromodichloromethane	ND	ug/L		1.0		SW8260B	06/13/09 20:13 / abb
Bromoform	ND	ug/L		1.0		SW8260B	06/13/09 20:13 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	06/13/09 20:13 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	06/13/09 20:13 / abb
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	06/13/09 20:13 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	06/13/09 20:13 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	06/13/09 20:13 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	06/13/09 20:13 / abb
Chloroform	3.5	ug/L		1.0		SW8260B	06/13/09 20:13 / abb
Chloromethane	ND	ug/L		1.0		SW8260B	06/13/09 20:13 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	06/13/09 20:13 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	06/13/09 20:13 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	06/13/09 20:13 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/13/09 20:13 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/13/09 20:13 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	06/13/09 20:13 / abb
Dichlorodifluoromethane	0.98	ug/L	J	1.0		SW8260B	06/13/09 20:13 / abb
1,1-Dichloroethane	0.39	ug/L	J	1.0		SW8260B	06/13/09 20:13 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	06/13/09 20:13 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	06/13/09 20:13 / abb
cis-1,2-Dichloroethene	0.44	ug/L	J	1.0		SW8260B	06/13/09 20:13 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	06/13/09 20:13 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	06/13/09 20:13 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/13/09 20:13 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/13/09 20:13 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	06/13/09 20:13 / abb
2-Hexanone	ND	ug/L		20		SW8260B	06/13/09 20:13 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	06/13/09 20:13 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	06/13/09 20:13 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	06/13/09 20:13 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	06/13/09 20:13 / abb
Styrene	ND	ug/L		1.0		SW8260B	06/13/09 20:13 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/13/09 20:13 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/13/09 20:13 / abb
Tetrachloroethene	2.2	ug/L		1.0		SW8260B	06/13/09 20:13 / abb
Toluene	ND	ug/L		1.0		SW8260B	06/13/09 20:13 / abb
1,1,1-Trichloroethane	0.17	ug/L	J	1.0		SW8260B	06/13/09 20:13 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	06/13/09 20:13 / abb
Trichloroethene	0.36	ug/L	J	1.0		SW8260B	06/13/09 20:13 / abb

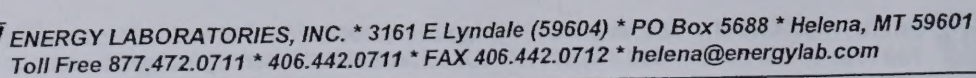
Report RL - Analyte reporting limit.

Definitions: QCL - Quality control limit.

J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



R₁₅ #52

Report Date: 07/01/09
Collection Date: 06/09/09 13:20
DateReceived: 06/10/09
Matrix: Aqueous

Report RL - Analyte reporting limit.

Definitions: QCL - Quality control limit.

J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060177-008
Client Sample ID: HL-0906-107

Report Date: 07/01/09
Collection Date: 06/09/09 13:20
Date Received: 06/10/09
Matrix: Aqueous

Res #48

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	06/13/09 20:42 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	06/13/09 20:42 / abb
Benzene	ND	ug/L		1.0		SW8260B	06/13/09 20:42 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	06/13/09 20:42 / abb
Bromodichloromethane	ND	ug/L		1.0		SW8260B	06/13/09 20:42 / abb
Bromoform	ND	ug/L		1.0		SW8260B	06/13/09 20:42 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	06/13/09 20:42 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	06/13/09 20:42 / abb
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	06/13/09 20:42 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	06/13/09 20:42 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	06/13/09 20:42 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	06/13/09 20:42 / abb
Chloroform	3.1	ug/L		1.0		SW8260B	06/13/09 20:42 / abb
Chloromethane	ND	ug/L		1.0		SW8260B	06/13/09 20:42 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	06/13/09 20:42 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	06/13/09 20:42 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	06/13/09 20:42 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/13/09 20:42 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/13/09 20:42 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	06/13/09 20:42 / abb
Dichlorodifluoromethane	0.38	ug/L	J	1.0		SW8260B	06/13/09 20:42 / abb
1,1-Dichloroethane	0.45	ug/L	J	1.0		SW8260B	06/13/09 20:42 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	06/13/09 20:42 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	06/13/09 20:42 / abb
cis-1,2-Dichloroethene	0.50	ug/L	J	1.0		SW8260B	06/13/09 20:42 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	06/13/09 20:42 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	06/13/09 20:42 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/13/09 20:42 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/13/09 20:42 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	06/13/09 20:42 / abb
2-Hexanone	ND	ug/L		20		SW8260B	06/13/09 20:42 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	06/13/09 20:42 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	06/13/09 20:42 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	06/13/09 20:42 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	06/13/09 20:42 / abb
Styrene	ND	ug/L		1.0		SW8260B	06/13/09 20:42 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/13/09 20:42 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/13/09 20:42 / abb
Tetrachloroethene	2.3	ug/L		1.0		SW8260B	06/13/09 20:42 / abb
Toluene	ND	ug/L		1.0		SW8260B	06/13/09 20:42 / abb
1,1,1-Trichloroethane	0.22	ug/L	J	1.0		SW8260B	06/13/09 20:42 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	06/13/09 20:42 / abb
Trichloroethene	0.36	ug/L	J	1.0		SW8260B	06/13/09 20:42 / abb

Report RL - Analyte reporting limit.

Definitions: QCL - Quality control limit.

J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060177-008
Client Sample ID: HL-0906-107

Res #48

Report Date: 07/01/09
Collection Date: 06/09/09 13:20
Date Received: 06/10/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Trichlorofluoromethane	0.27	ug/L	J	1.0		SW8260B	06/13/09 20:42 / abb
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	06/13/09 20:42 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	06/13/09 20:42 / abb
Vinyl chloride	ND	ug/L		1.0		SW8260B	06/13/09 20:42 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	06/13/09 20:42 / abb
o-Xylene	ND	ug/L		1.0		SW8260B	06/13/09 20:42 / abb
Xylenes, Total	ND	ug/L		1.0		SW8260B	06/13/09 20:42 / abb
Surr: 1,2-Dichloroethane-d4	106	%REC		70-130		SW8260B	06/13/09 20:42 / abb
Surr: Dibromofluoromethane	95.0	%REC		70-130		SW8260B	06/13/09 20:42 / abb
Surr: p-Bromofluorobenzene	110	%REC		70-130		SW8260B	06/13/09 20:42 / abb
Surr: Toluene-d8	109	%REC		70-130		SW8260B	06/13/09 20:42 / abb

**Report
Definitions:**

RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060177-009
Client Sample ID: HL-0906-108

Report Date: 07/01/09
Collection Date: 06/09/09 13:50
Date Received: 06/10/09
Matrix: Aqueous

I-4

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	06/13/09 21:12 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	06/13/09 21:12 / abb
Benzene	ND	ug/L		1.0		SW8260B	06/13/09 21:12 / abb
Bromochloromethane	0.48	ug/L	J	1.0		SW8260B	06/13/09 21:12 / abb
Bromodichloromethane	ND	ug/L		1.0		SW8260B	06/13/09 21:12 / abb
Bromoform	ND	ug/L		1.0		SW8260B	06/13/09 21:12 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	06/13/09 21:12 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	06/13/09 21:12 / abb
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	06/13/09 21:12 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	06/13/09 21:12 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	06/13/09 21:12 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	06/13/09 21:12 / abb
Chloroform	1.9	ug/L		1.0		SW8260B	06/13/09 21:12 / abb
Chloromethane	ND	ug/L		1.0		SW8260B	06/13/09 21:12 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	06/13/09 21:12 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	06/13/09 21:12 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	06/13/09 21:12 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/13/09 21:12 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/13/09 21:12 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	06/13/09 21:12 / abb
Dichlorodifluoromethane	2.5	ug/L		1.0		SW8260B	06/13/09 21:12 / abb
1,1-Dichloroethane	2.8	ug/L		1.0		SW8260B	06/13/09 21:12 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	06/13/09 21:12 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	06/13/09 21:12 / abb
cis-1,2-Dichloroethene	1.3	ug/L		1.0		SW8260B	06/13/09 21:12 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	06/13/09 21:12 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	06/13/09 21:12 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/13/09 21:12 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/13/09 21:12 / abb
Ethylbenzene	0.36	ug/L	J	1.0		SW8260B	06/13/09 21:12 / abb
2-Hexanone	ND	ug/L		20		SW8260B	06/13/09 21:12 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	06/13/09 21:12 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	06/13/09 21:12 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	06/13/09 21:12 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	06/13/09 21:12 / abb
Styrene	ND	ug/L		1.0		SW8260B	06/13/09 21:12 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/13/09 21:12 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/13/09 21:12 / abb
Tetrachloroethene	8.9	ug/L		1.0		SW8260B	06/13/09 21:12 / abb
Toluene	ND	ug/L		1.0		SW8260B	06/13/09 21:12 / abb
1,1,1-Trichloroethane	0.63	ug/L	J	1.0		SW8260B	06/13/09 21:12 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	06/13/09 21:12 / abb
Trichloroethene	1.9	ug/L		1.0		SW8260B	06/13/09 21:12 / abb

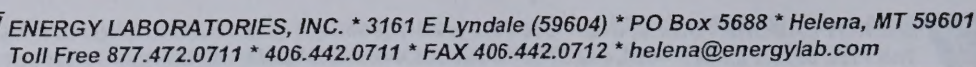
Report RL - Analyte reporting limit.

Definitions: QCL - Quality control limit.

J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Report Date: 07/01/09
Collection Date: 06/09/09 13:50
DateReceived: 06/10/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Trichlorofluoromethane	0.50	ug/L	J	1.0		SW8260B	06/13/09 21:12 / abb
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	06/13/09 21:12 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	06/13/09 21:12 / abb
Vinyl chloride	ND	ug/L		1.0		SW8260B	06/13/09 21:12 / abb
m+p-Xylenes	0.36	ug/L	J	1.0		SW8260B	06/13/09 21:12 / abb
o-Xylene	0.20	ug/L	J	1.0		SW8260B	06/13/09 21:12 / abb
Xylenes, Total	0.57	ug/L	J	1.0		SW8260B	06/13/09 21:12 / abb
Surr: 1,2-Dichloroethane-d4	102	%REC		70-130		SW8260B	06/13/09 21:12 / abb
Surr: Dibromofluoromethane	90.0	%REC		70-130		SW8260B	06/13/09 21:12 / abb
Surr: p-Bromofluorobenzene	118	%REC		70-130		SW8260B	06/13/09 21:12 / abb
Surr: Toluene-d8	111	%REC		70-130		SW8260B	06/13/09 21:12 / abb

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

J - Estimated value. The analyte was present but less than the reporting limit.



ENERGY LABORATORIES, INC. * 3161 E Lyndale (59604) * PO Box 5688 * Helena, MT 59601
Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@energylab.com

LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060177-010
Client Sample ID: HL-0906-109

Report Date: 07/01/09
Collection Date: 06/10/09 07:50
Date Received: 06/10/09
Matrix: Aqueous

Ros #62

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	06/15/09 20:28 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	06/15/09 20:28 / abb
Benzene	ND	ug/L		1.0		SW8260B	06/15/09 20:28 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	06/15/09 20:28 / abb
Bromodichloromethane	ND	ug/L		1.0		SW8260B	06/15/09 20:28 / abb
Bromoform	ND	ug/L		1.0		SW8260B	06/15/09 20:28 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	06/15/09 20:28 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	06/15/09 20:28 / abb
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	06/15/09 20:28 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	06/15/09 20:28 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	06/15/09 20:28 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	06/15/09 20:28 / abb
Chloroform	0.70	ug/L	J	1.0		SW8260B	06/15/09 20:28 / abb
Chloromethane	ND	ug/L		1.0		SW8260B	06/15/09 20:28 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	06/15/09 20:28 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	06/15/09 20:28 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	06/15/09 20:28 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/15/09 20:28 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/15/09 20:28 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	06/15/09 20:28 / abb
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	06/15/09 20:28 / abb
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	06/15/09 20:28 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	06/15/09 20:28 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	06/15/09 20:28 / abb
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	06/15/09 20:28 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	06/15/09 20:28 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	06/15/09 20:28 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/15/09 20:28 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/15/09 20:28 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	06/15/09 20:28 / abb
2-Hexanone	ND	ug/L		20		SW8260B	06/15/09 20:28 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	06/15/09 20:28 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	06/15/09 20:28 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	06/15/09 20:28 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	06/15/09 20:28 / abb
Styrene	ND	ug/L		1.0		SW8260B	06/15/09 20:28 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/15/09 20:28 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/15/09 20:28 / abb
Tetrachloroethene	0.38	ug/L	J	1.0		SW8260B	06/15/09 20:28 / abb
Toluene	ND	ug/L		1.0		SW8260B	06/15/09 20:28 / abb
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	06/15/09 20:28 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	06/15/09 20:28 / abb
Trichloroethene	ND	ug/L		1.0		SW8260B	06/15/09 20:28 / abb

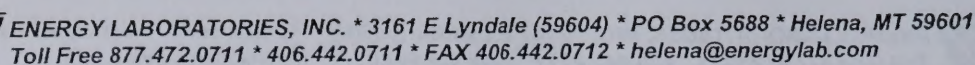
Report RL - Analyte reporting limit.

Definitions: QCL - Quality control limit.

J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



Res #62

Report Date: 07/01/09
Collection Date: 06/10/09 07:50
DateReceived: 06/10/09
Matrix: Aqueous

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060177-011
Client Sample ID: HL-0906-110

HL-90-2

Report Date: 07/01/09
Collection Date: 06/10/09 08:35
Date Received: 06/10/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.6	s.u.		0.1		A4500-H B	06/11/09 10:55 / JG
Conductivity	691	umhos/cm		1		A2510 B	06/11/09 10:52 / JG
INORGANICS							
Cyanide, Total	ND	mg/L		0.005		Kelada mod	06/12/09 14:59 / eli-b
Chloride	27	mg/L		1		E300.0	06/17/09 23:08 / hm
Sulfate	50	mg/L		1		E300.0	06/17/09 23:08 / hm
AGGREGATE ORGANICS							
Oxygen Demand, Chemical (COD)	1	mg/L		1		E410.4	06/12/09 15:00 / stp
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	0.70	mg/L		0.05		E353.2	06/11/09 13:40 / stp
METALS, DISSOLVED							
Antimony	ND	mg/L		0.005		E200.8	06/17/09 02:04 / eli-b
Arsenic	ND	mg/L		0.005		E200.8	06/17/09 02:04 / eli-b
Barium	ND	mg/L		0.1		E200.7	06/15/09 14:19 / eli-b
Beryllium	ND	mg/L		0.001		E200.7	06/15/09 14:19 / eli-b
Cadmium	ND	mg/L		0.001		E200.8	06/17/09 02:04 / eli-b
Chromium	ND	mg/L		0.01		E200.7	06/15/09 14:19 / eli-b
Cobalt	ND	mg/L		0.01		E200.7	06/15/09 14:19 / eli-b
Copper	ND	mg/L		0.01		E200.7	06/15/09 14:19 / eli-b
Iron	ND	mg/L		0.03		E200.7	06/15/09 14:19 / eli-b
Lead	ND	mg/L		0.01		E200.8	06/17/09 02:04 / eli-b
Mercury	ND	mg/L		0.001		E200.8	06/18/09 02:34 / eli-b
Nickel	ND	mg/L		0.01		E200.7	06/15/09 14:19 / eli-b
Selenium	ND	mg/L		0.005		E200.8	06/17/09 02:04 / eli-b
Silver	ND	mg/L		0.005		E200.7	06/15/09 14:19 / eli-b
Thallium	ND	mg/L		0.005		E200.8	06/17/09 02:04 / eli-b
Vanadium	ND	mg/L		0.1		E200.7	06/15/09 14:19 / eli-b
Zinc	ND	mg/L		0.01		E200.7	06/15/09 14:19 / eli-b
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	06/13/09 21:41 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	06/13/09 21:41 / abb
Benzene	ND	ug/L		1.0		SW8260B	06/13/09 21:41 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	06/13/09 21:41 / abb
Bromodichloromethane	ND	ug/L		1.0		SW8260B	06/13/09 21:41 / abb
Bromoform	ND	ug/L		1.0		SW8260B	06/13/09 21:41 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	06/13/09 21:41 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	06/13/09 21:41 / abb

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060177-011
Client Sample ID: HL-0906-110

Report Date: 07/01/09
Collection Date: 06/10/09 08:35
Date Received: 06/10/09
Matrix: Aqueous

HL-90-2

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	06/13/09 21:41 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	06/13/09 21:41 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	06/13/09 21:41 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	06/13/09 21:41 / abb
Chloroform	ND	ug/L		1.0		SW8260B	06/13/09 21:41 / abb
Chloromethane	ND	ug/L		1.0		SW8260B	06/13/09 21:41 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	06/13/09 21:41 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	06/13/09 21:41 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	06/13/09 21:41 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/13/09 21:41 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/13/09 21:41 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	06/13/09 21:41 / abb
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	06/13/09 21:41 / abb
1,1-Dichloroethane	0.45	ug/L	J	1.0		SW8260B	06/13/09 21:41 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	06/13/09 21:41 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	06/13/09 21:41 / abb
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	06/13/09 21:41 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	06/13/09 21:41 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	06/13/09 21:41 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/13/09 21:41 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/13/09 21:41 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	06/13/09 21:41 / abb
2-Hexanone	ND	ug/L		20		SW8260B	06/13/09 21:41 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	06/13/09 21:41 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	06/13/09 21:41 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	06/13/09 21:41 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	06/13/09 21:41 / abb
Styrene	ND	ug/L		1.0		SW8260B	06/13/09 21:41 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/13/09 21:41 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/13/09 21:41 / abb
Tetrachloroethene	0.20	ug/L	J	1.0		SW8260B	06/13/09 21:41 / abb
Toluene	ND	ug/L		1.0		SW8260B	06/13/09 21:41 / abb
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	06/13/09 21:41 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	06/13/09 21:41 / abb
Trichloroethene	ND	ug/L		1.0		SW8260B	06/13/09 21:41 / abb
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	06/13/09 21:41 / abb
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	06/13/09 21:41 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	06/13/09 21:41 / abb
Vinyl chloride	ND	ug/L		1.0		SW8260B	06/13/09 21:41 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	06/13/09 21:41 / abb
o-Xylene	ND	ug/L		1.0		SW8260B	06/13/09 21:41 / abb
Xylenes, Total	ND	ug/L		1.0		SW8260B	06/13/09 21:41 / abb
Surr: 1,2-Dichloroethane-d4	102	%REC		70-130		SW8260B	06/13/09 21:41 / abb

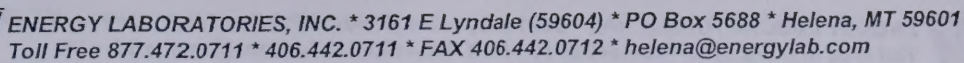
Report RL - Analyte reporting limit.

Definitions: QCL - Quality control limit.

J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060177-011
Client Sample ID: HL-0906-110

Report Date: 07/01/09
Collection Date: 06/10/09 08:35
DateReceived: 06/10/09
Matrix: Aqueous

HL-90-2

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Surr: Dibromofluoromethane	81.0	%REC		70-130		SW8260B	06/13/09 21:41 / abb
Surr: p-Bromofluorobenzene	114	%REC		70-130		SW8260B	06/13/09 21:41 / abb
Surr: Toluene-d8	113	%REC		70-130		SW8260B	06/13/09 21:41 / abb

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060177-012
Client Sample ID: HL-0906-111

Report Date: 07/01/09
Collection Date: 06/10/09 09:45
Date Received: 06/10/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.6	s.u.		0.1		A4500-H B	06/11/09 10:57 / JG
Conductivity	998	umhos/cm		1		A2510 B	06/11/09 10:53 / JG
INORGANICS							
Cyanide, Total	ND	mg/L		0.005		Kelada mod	06/12/09 15:08 / eli-b
Chloride	23	mg/L		1		E300.0	06/17/09 23:25 / hm
Sulfate	97	mg/L		1		E300.0	06/17/09 23:25 / hm
AGGREGATE ORGANICS							
Oxygen Demand, Chemical (COD)	4	mg/L		1		E410.4	06/12/09 15:00 / stp
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	5.1	mg/L	D	0.1		E353.2	06/11/09 13:42 / stp
METALS, DISSOLVED							
Antimony	ND	mg/L		0.005		E200.8	06/17/09 02:11 / eli-b
Arsenic	ND	mg/L		0.005		E200.8	06/17/09 02:11 / eli-b
Barium	ND	mg/L		0.1		E200.7	06/15/09 14:23 / eli-b
Beryllium	ND	mg/L		0.001		E200.7	06/15/09 14:23 / eli-b
Cadmium	0.002	mg/L		0.001		E200.8	06/17/09 02:11 / eli-b
Chromium	ND	mg/L		0.01		E200.7	06/15/09 14:23 / eli-b
Cobalt	ND	mg/L		0.01		E200.7	06/15/09 14:23 / eli-b
Copper	ND	mg/L		0.01		E200.7	06/15/09 14:23 / eli-b
Iron	ND	mg/L		0.03		E200.7	06/15/09 14:23 / eli-b
Lead	ND	mg/L		0.01		E200.8	06/17/09 02:11 / eli-b
Mercury	ND	mg/L		0.001		E200.8	06/18/09 02:41 / eli-b
Nickel	ND	mg/L		0.01		E200.7	06/15/09 14:23 / eli-b
Selenium	0.007	mg/L		0.005		E200.8	06/17/09 02:11 / eli-b
Silver	ND	mg/L		0.005		E200.7	06/15/09 14:23 / eli-b
Thallium	ND	mg/L		0.005		E200.8	06/17/09 02:11 / eli-b
Vanadium	ND	mg/L		0.1		E200.7	06/15/09 14:23 / eli-b
Zinc	ND	mg/L		0.01		E200.7	06/15/09 14:23 / eli-b
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	06/13/09 22:11 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	06/13/09 22:11 / abb
Benzene	ND	ug/L		1.0		SW8260B	06/13/09 22:11 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	06/13/09 22:11 / abb
Bromodichloromethane	0.86	ug/L	J	1.0		SW8260B	06/13/09 22:11 / abb
Bromoform	ND	ug/L		1.0		SW8260B	06/13/09 22:11 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	06/13/09 22:11 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	06/13/09 22:11 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
J - Estimated value. The analyte was present but less than reporting limit.



LABORATORY ANALYTICAL REPORT

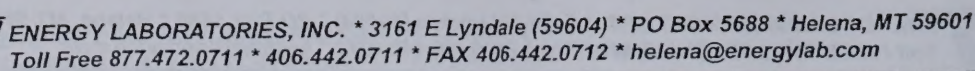
Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060177-012
Client Sample ID: HL-0906-111

Report Date: 07/01/09
Collection Date: 06/10/09 09:45
Date Received: 06/10/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	06/13/09 22:11 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	06/13/09 22:11 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	06/13/09 22:11 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	06/13/09 22:11 / abb
Chloroform	5.9	ug/L		1.0		SW8260B	06/13/09 22:11 / abb
Chloromethane	ND	ug/L		1.0		SW8260B	06/13/09 22:11 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	06/13/09 22:11 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	06/13/09 22:11 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	06/13/09 22:11 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/13/09 22:11 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/13/09 22:11 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	06/13/09 22:11 / abb
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	06/13/09 22:11 / abb
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	06/13/09 22:11 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	06/13/09 22:11 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	06/13/09 22:11 / abb
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	06/13/09 22:11 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	06/13/09 22:11 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	06/13/09 22:11 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/13/09 22:11 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/13/09 22:11 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	06/13/09 22:11 / abb
2-Hexanone	ND	ug/L		20		SW8260B	06/13/09 22:11 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	06/13/09 22:11 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	06/13/09 22:11 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	06/13/09 22:11 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	06/13/09 22:11 / abb
Styrene	ND	ug/L		1.0		SW8260B	06/13/09 22:11 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/13/09 22:11 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/13/09 22:11 / abb
Tetrachloroethene	ND	ug/L		1.0		SW8260B	06/13/09 22:11 / abb
Toluene	ND	ug/L		1.0		SW8260B	06/13/09 22:11 / abb
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	06/13/09 22:11 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	06/13/09 22:11 / abb
Trichloroethene	ND	ug/L		1.0		SW8260B	06/13/09 22:11 / abb
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	06/13/09 22:11 / abb
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	06/13/09 22:11 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	06/13/09 22:11 / abb
Vinyl chloride	ND	ug/L		1.0		SW8260B	06/13/09 22:11 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	06/13/09 22:11 / abb
o-Xylene	ND	ug/L		1.0		SW8260B	06/13/09 22:11 / abb
Xylenes, Total	ND	ug/L		1.0		SW8260B	06/13/09 22:11 / abb
Surr: 1,2-Dichloroethane-d4	100	%REC		70-130		SW8260B	06/13/09 22:11 / abb

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060177-012
Client Sample ID: HL-0906-111

Report Date: 07/01/09
Collection Date: 06/10/09 09:45
DateReceived: 06/10/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Surr: Dibromofluoromethane	84.0	%REC		70-130		SW8260B	06/13/09 22:11 / abb
Surr: p-Bromofluorobenzene	108	%REC		70-130		SW8260B	06/13/09 22:11 / abb
Surr: Toluene-d8	115	%REC		70-130		SW8260B	06/13/09 22:11 / abb

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060177-013
Client Sample ID: HL-0906-113

Report Date: 07/01/09
Collection Date: 06/10/09 10:20
Date Received: 06/10/09
Matrix: Aqueous

HL-06-1

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.1	s.u.		0.1		A4500-H B	06/11/09 10:59 / JG
Conductivity	1340	umhos/cm		1		A2510 B	06/11/09 10:57 / JG
INORGANICS							
Cyanide, Total	ND	mg/L		0.005		Kelada mod	06/12/09 15:15 / eli-b
Chloride	32	mg/L		1		E300.0	06/17/09 23:41 / hm
Sulfate	200	mg/L		1		E300.0	06/17/09 23:41 / hm
AGGREGATE ORGANICS							
Oxygen Demand, Chemical (COD)	ND	mg/L		1		E410.4	06/12/09 15:00 / stp
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	5.7	mg/L	D	0.1		E353.2	06/11/09 13:44 / stp
METALS, DISSOLVED							
Antimony	ND	mg/L		0.005		E200.8	06/17/09 02:46 / eli-b
Arsenic	ND	mg/L		0.005		E200.8	06/17/09 02:46 / eli-b
Barium	ND	mg/L		0.1		E200.7	06/15/09 14:27 / eli-b
Beryllium	ND	mg/L		0.001		E200.7	06/15/09 14:27 / eli-b
Cadmium	0.002	mg/L		0.001		E200.8	06/17/09 02:46 / eli-b
Chromium	ND	mg/L		0.01		E200.7	06/15/09 14:27 / eli-b
Cobalt	ND	mg/L		0.01		E200.7	06/15/09 14:27 / eli-b
Copper	ND	mg/L		0.01		E200.7	06/15/09 14:27 / eli-b
Iron	ND	mg/L		0.03		E200.7	06/15/09 14:27 / eli-b
Lead	ND	mg/L		0.01		E200.8	06/17/09 02:46 / eli-b
Mercury	ND	mg/L		0.001		E200.8	06/18/09 03:39 / eli-b
Nickel	ND	mg/L		0.01		E200.7	06/15/09 14:27 / eli-b
Selenium	ND	mg/L		0.005		E200.8	06/17/09 02:46 / eli-b
Silver	ND	mg/L		0.005		E200.7	06/15/09 14:27 / eli-b
Thallium	ND	mg/L		0.005		E200.8	06/17/09 02:46 / eli-b
Vanadium	ND	mg/L		0.1		E200.7	06/15/09 14:27 / eli-b
Zinc	ND	mg/L		0.01		E200.7	06/15/09 14:27 / eli-b
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	06/13/09 22:40 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	06/13/09 22:40 / abb
Benzene	ND	ug/L		1.0		SW8260B	06/13/09 22:40 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	06/13/09 22:40 / abb
Bromodichloromethane	ND	ug/L		1.0		SW8260B	06/13/09 22:40 / abb
Bromoform	ND	ug/L		1.0		SW8260B	06/13/09 22:40 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	06/13/09 22:40 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	06/13/09 22:40 / abb

Report RL - Analyte reporting limit.

Definitions: QCL - Quality control limit.

D - RL increased due to sample matrix interference.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060177-013
Client Sample ID: HL-0906-113

Report Date: 07/01/09
Collection Date: 06/10/09 10:20
Date Received: 06/10/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	06/13/09 22:40 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	06/13/09 22:40 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	06/13/09 22:40 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	06/13/09 22:40 / abb
Chloroform	ND	ug/L		1.0		SW8260B	06/13/09 22:40 / abb
Chloromethane	ND	ug/L		1.0		SW8260B	06/13/09 22:40 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	06/13/09 22:40 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	06/13/09 22:40 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	06/13/09 22:40 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/13/09 22:40 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/13/09 22:40 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	06/13/09 22:40 / abb
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	06/13/09 22:40 / abb
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	06/13/09 22:40 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	06/13/09 22:40 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	06/13/09 22:40 / abb
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	06/13/09 22:40 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	06/13/09 22:40 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	06/13/09 22:40 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/13/09 22:40 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/13/09 22:40 / abb
Ethylbenzene	ND	ug/L		20		SW8260B	06/13/09 22:40 / abb
2-Hexanone	ND	ug/L		1.0		SW8260B	06/13/09 22:40 / abb
Iodomethane	ND	ug/L		20		SW8260B	06/13/09 22:40 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	06/13/09 22:40 / abb
Methyl isobutyl ketone	ND	ug/L		1.0		SW8260B	06/13/09 22:40 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	06/13/09 22:40 / abb
Styrene	ND	ug/L		1.0		SW8260B	06/13/09 22:40 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/13/09 22:40 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/13/09 22:40 / abb
Tetrachloroethene	ND	ug/L		1.0		SW8260B	06/13/09 22:40 / abb
Toluene	ND	ug/L		1.0		SW8260B	06/13/09 22:40 / abb
1,1,1-Trichloroethane	4.4	ug/L		1.0		SW8260B	06/13/09 22:40 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	06/13/09 22:40 / abb
Trichloroethene	ND	ug/L		1.0		SW8260B	06/13/09 22:40 / abb
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	06/13/09 22:40 / abb
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	06/13/09 22:40 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	06/13/09 22:40 / abb
Vinyl chloride	ND	ug/L		1.0		SW8260B	06/13/09 22:40 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	06/13/09 22:40 / abb
o-Xylene	ND	ug/L		1.0		SW8260B	06/13/09 22:40 / abb
Xylenes, Total	ND	ug/L		1.0		SW8260B	06/13/09 22:40 / abb
Surr: 1,2-Dichloroethane-d4	101	%REC		70-130		SW8260B	06/13/09 22:40 / abb

Report

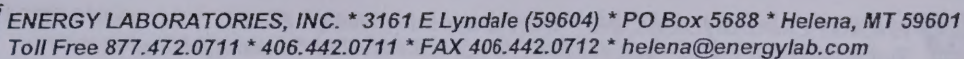
RL - Analyte reporting limit.

MCL - Maximum contaminant level.

Definitions:

QCL - Quality control limit.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060177-013
Client Sample ID: HL-0906-113

Report Date: 07/01/09
Collection Date: 06/10/09 10:20
DateReceived: 06/10/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Surr: Dibromofluoromethane	86.0	%REC		70-130		SW8260B	06/13/09 22:40 / abb
Surr: p-Bromofluorobenzene	108	%REC		70-130		SW8260B	06/13/09 22:40 / abb
Surr: Toluene-d8	116	%REC		70-130		SW8260B	06/13/09 22:40 / abb

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060177-014
Client Sample ID: HL-0906-114

HL-80-3

Report Date: 07/01/09
Collection Date: 06/10/09 12:20
Date Received: 06/10/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.5	s.u.		0.1		A4500-H B	06/11/09 11:01 / JG
Conductivity	1190	umhos/cm		1		A2510 B	06/11/09 10:58 / JG
INORGANICS							
Cyanide, Total	ND	mg/L		0.005		Kelada mod	06/12/09 15:17 / eli-b
Chloride	58	mg/L		1		E300.0	06/18/09 00:30 / hm
Sulfate	190	mg/L		1		E300.0	06/18/09 00:30 / hm
AGGREGATE ORGANICS							
Oxygen Demand, Chemical (COD)	3	mg/L		1		E410.4	06/12/09 15:00 / stp
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	11.6	mg/L	D	0.1		E353.2	06/11/09 13:46 / stp
METALS, DISSOLVED							
Antimony	ND	mg/L		0.005		E200.8	06/17/09 02:53 / eli-b
Arsenic	ND	mg/L		0.005		E200.8	06/17/09 02:53 / eli-b
Barium	ND	mg/L		0.1		E200.7	06/15/09 14:31 / eli-b
Beryllium	ND	mg/L		0.001		E200.7	06/15/09 14:31 / eli-b
Cadmium	ND	mg/L		0.001		E200.8	06/17/09 02:53 / eli-b
Chromium	ND	mg/L		0.01		E200.7	06/15/09 14:31 / eli-b
Cobalt	ND	mg/L		0.01		E200.7	06/15/09 14:31 / eli-b
Copper	ND	mg/L		0.01		E200.7	06/15/09 14:31 / eli-b
Iron	ND	mg/L		0.03		E200.7	06/15/09 14:31 / eli-b
Lead	ND	mg/L		0.01		E200.8	06/17/09 02:53 / eli-b
Mercury	ND	mg/L		0.001		E200.8	06/18/09 03:46 / eli-b
Nickel	ND	mg/L		0.01		E200.7	06/15/09 14:31 / eli-b
Selenium	ND	mg/L		0.005		E200.8	06/17/09 02:53 / eli-b
Silver	ND	mg/L		0.005		E200.7	06/15/09 14:31 / eli-b
Thallium	ND	mg/L		0.005		E200.8	06/17/09 02:53 / eli-b
Vanadium	ND	mg/L		0.1		E200.7	06/15/09 14:31 / eli-b
Zinc	ND	mg/L		0.01		E200.7	06/15/09 14:31 / eli-b
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	06/13/09 23:09 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	06/13/09 23:09 / abb
Benzene	ND	ug/L		1.0		SW8260B	06/13/09 23:09 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	06/13/09 23:09 / abb
Bromodichloromethane	0.54	ug/L	J	1.0		SW8260B	06/13/09 23:09 / abb
Bromoform	ND	ug/L		1.0		SW8260B	06/13/09 23:09 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	06/13/09 23:09 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	06/13/09 23:09 / abb

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.
D - RL increased due to sample matrix interference.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
J - Estimated value. The analyte was present but less than reporting limit.



LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060177-014
Client Sample ID: HL-0906-114

Report Date: 07/01/09
Collection Date: 06/10/09 12:20
Date Received: 06/10/09
Matrix: Aqueous

HL-20-3

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	06/13/09 23:09 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	06/13/09 23:09 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	06/13/09 23:09 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	06/13/09 23:09 / abb
Chloroform	9.6	ug/L		1.0		SW8260B	06/13/09 23:09 / abb
Chloromethane	ND	ug/L		1.0		SW8260B	06/13/09 23:09 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	06/13/09 23:09 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	06/13/09 23:09 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	06/13/09 23:09 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/13/09 23:09 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/13/09 23:09 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	06/13/09 23:09 / abb
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	06/13/09 23:09 / abb
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	06/13/09 23:09 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	06/13/09 23:09 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	06/13/09 23:09 / abb
cis-1,2-Dichloroethene	0.21	ug/L	J	1.0		SW8260B	06/13/09 23:09 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	06/13/09 23:09 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	06/13/09 23:09 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/13/09 23:09 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/13/09 23:09 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	06/13/09 23:09 / abb
2-Hexanone	ND	ug/L		20		SW8260B	06/13/09 23:09 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	06/13/09 23:09 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	06/13/09 23:09 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	06/13/09 23:09 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	06/13/09 23:09 / abb
Styrene	ND	ug/L		1.0		SW8260B	06/13/09 23:09 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/13/09 23:09 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/13/09 23:09 / abb
Tetrachloroethene	0.33	ug/L	J	1.0		SW8260B	06/13/09 23:09 / abb
Toluene	ND	ug/L		1.0		SW8260B	06/13/09 23:09 / abb
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	06/13/09 23:09 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	06/13/09 23:09 / abb
Trichloroethene	ND	ug/L		1.0		SW8260B	06/13/09 23:09 / abb
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	06/13/09 23:09 / abb
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	06/13/09 23:09 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	06/13/09 23:09 / abb
Vinyl chloride	ND	ug/L		1.0		SW8260B	06/13/09 23:09 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	06/13/09 23:09 / abb
o-Xylene	ND	ug/L		1.0		SW8260B	06/13/09 23:09 / abb
Xylenes, Total	ND	ug/L		1.0		SW8260B	06/13/09 23:09 / abb
Surr: 1,2-Dichloroethane-d4	102	%REC		70-130		SW8260B	06/13/09 23:09 / abb

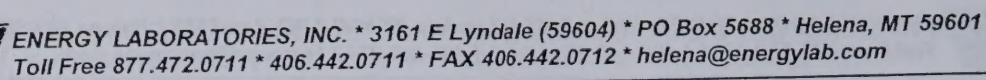
Report RL - Analyte reporting limit.

Definitions: QCL - Quality control limit.

J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060177-014
Client Sample ID: HL-0906-114

Report Date: 07/01/09
Collection Date: 06/10/09 12:20
DateReceived: 06/10/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Surr: Dibromofluoromethane	88.0	%REC		70-130		SW8260B	06/13/09 23:09 / abb
Surr: p-Bromofluorobenzene	114	%REC		70-130		SW8260B	06/13/09 23:09 / abb
Surr: Toluene-d8	112	%REC		70-130		SW8260B	06/13/09 23:09 / abb

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060177-015
Client Sample ID: HL-0906-115

HL-20-3
Duplicate

Report Date: 07/01/09
Collection Date: 06/10/09 12:45
Date Received: 06/10/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.6	s.u.		0.1		A4500-H B	06/11/09 11:07 / JG
Conductivity	1190	umhos/cm		1		A2510 B	06/11/09 11:05 / JG
INORGANICS							
Cyanide, Total	ND	mg/L		0.005		Kelada mod	06/12/09 15:19 / eli-b
Chloride	58	mg/L		1		E300.0	06/18/09 00:47 / hm
Sulfate	190	mg/L		1		E300.0	06/18/09 00:47 / hm
AGGREGATE ORGANICS							
Oxygen Demand, Chemical (COD)	5	mg/L		1		E410.4	06/12/09 15:00 / stp
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	11.4	mg/L	D	0.1		E353.2	06/11/09 13:48 / stp
METALS, DISSOLVED							
Antimony	ND	mg/L		0.005		E200.8	06/17/09 03:00 / eli-b
Arsenic	ND	mg/L		0.005		E200.8	06/17/09 03:00 / eli-b
Barium	ND	mg/L		0.1		E200.7	06/15/09 14:35 / eli-b
Beryllium	ND	mg/L		0.001		E200.7	06/15/09 14:35 / eli-b
Cadmium	ND	mg/L		0.001		E200.8	06/17/09 03:00 / eli-b
Chromium	ND	mg/L		0.01		E200.7	06/15/09 14:35 / eli-b
Cobalt	ND	mg/L		0.01		E200.7	06/15/09 14:35 / eli-b
Copper	ND	mg/L		0.01		E200.7	06/15/09 14:35 / eli-b
Iron	ND	mg/L		0.03		E200.7	06/15/09 14:35 / eli-b
Lead	ND	mg/L		0.01		E200.8	06/17/09 03:00 / eli-b
Mercury	ND	mg/L		0.001		E200.8	06/18/09 03:53 / eli-b
Nickel	ND	mg/L		0.01		E200.7	06/15/09 14:35 / eli-b
Selenium	ND	mg/L		0.005		E200.8	06/17/09 03:00 / eli-b
Silver	ND	mg/L		0.005		E200.7	06/15/09 14:35 / eli-b
Thallium	ND	mg/L		0.005		E200.8	06/17/09 03:00 / eli-b
Vanadium	ND	mg/L		0.1		E200.7	06/15/09 14:35 / eli-b
Zinc	ND	mg/L		0.01		E200.7	06/15/09 14:35 / eli-b
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	06/13/09 23:38 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	06/13/09 23:38 / abb
Benzene	ND	ug/L		1.0		SW8260B	06/13/09 23:38 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	06/13/09 23:38 / abb
Bromodichloromethane	0.56	ug/L	J	1.0		SW8260B	06/13/09 23:38 / abb
Bromoform	ND	ug/L		1.0		SW8260B	06/13/09 23:38 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	06/13/09 23:38 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	06/13/09 23:38 / abb

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.
D - RL increased due to sample matrix interference.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
J - Estimated value. The analyte was present but less than reporting limit.



LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060177-015
Client Sample ID: HL-0906-115

Report Date: 07/01/09
Collection Date: 06/10/09 12:45
Date Received: 06/10/09
Matrix: Aqueous

HL-90-3
Duplicate

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	06/13/09 23:38 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	06/13/09 23:38 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	06/13/09 23:38 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	06/13/09 23:38 / abb
Chloroform	9.2	ug/L		1.0		SW8260B	06/13/09 23:38 / abb
Chloromethane	ND	ug/L		1.0		SW8260B	06/13/09 23:38 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	06/13/09 23:38 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	06/13/09 23:38 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	06/13/09 23:38 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/13/09 23:38 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/13/09 23:38 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	06/13/09 23:38 / abb
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	06/13/09 23:38 / abb
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	06/13/09 23:38 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	06/13/09 23:38 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	06/13/09 23:38 / abb
cis-1,2-Dichloroethene	0.24	ug/L	J	1.0		SW8260B	06/13/09 23:38 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	06/13/09 23:38 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	06/13/09 23:38 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/13/09 23:38 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/13/09 23:38 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	06/13/09 23:38 / abb
2-Hexanone	ND	ug/L		20		SW8260B	06/13/09 23:38 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	06/13/09 23:38 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	06/13/09 23:38 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	06/13/09 23:38 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	06/13/09 23:38 / abb
Styrene	ND	ug/L		1.0		SW8260B	06/13/09 23:38 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/13/09 23:38 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/13/09 23:38 / abb
Tetrachloroethene	0.32	ug/L	J	1.0		SW8260B	06/13/09 23:38 / abb
Toluene	ND	ug/L		1.0		SW8260B	06/13/09 23:38 / abb
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	06/13/09 23:38 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	06/13/09 23:38 / abb
Trichloroethene	ND	ug/L		1.0		SW8260B	06/13/09 23:38 / abb
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	06/13/09 23:38 / abb
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	06/13/09 23:38 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	06/13/09 23:38 / abb
Vinyl chloride	ND	ug/L		1.0		SW8260B	06/13/09 23:38 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	06/13/09 23:38 / abb
o-Xylene	ND	ug/L		1.0		SW8260B	06/13/09 23:38 / abb
Xylenes, Total	ND	ug/L		1.0		SW8260B	06/13/09 23:38 / abb
Surr: 1,2-Dichloroethane-d4	102	%REC		70-130		SW8260B	06/13/09 23:38 / abb

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.

J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



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Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@energylab.com

LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060177-015
Client Sample ID: HL-0906-115

HL-90-3
Duplicate

Report Date: 07/01/09
Collection Date: 06/10/09 12:45
Date Received: 06/10/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Surr: Dibromofluoromethane	91.0	%REC		70-130		SW8260B	06/13/09 23:38 / abb
Surr: p-Bromofluorobenzene	113	%REC		70-130		SW8260B	06/13/09 23:38 / abb
Surr: Toluene-d8	110	%REC		70-130		SW8260B	06/13/09 23:38 / abb
1,1-Dichloroethene							
1,2-Dichloroethene							
1,1,1-Trichloroethene							
1,1,2-Trichloroethene							
1,2-Dichlorobenzene							
1,4-Dichlorobenzene							
1,2,3-Trichlorobenzene							
1,2,4-Trichlorobenzene							
1,3,5-Trichlorobenzene							
1,2,3,4-Tetrachlorobenzene							
1,2,3,5-Tetrachlorobenzene							
1,2,3,6-Tetrachlorobenzene							
1,2,4,5-Tetrachlorobenzene							
1,3,4,5-Tetrachlorobenzene							
1,2,3,4,5-Pentachlorobenzene							
1,2,3,4,6-Pentachlorobenzene							
1,2,3,5,6-Pentachlorobenzene							
1,2,4,5,6-Pentachlorobenzene							
1,3,4,5,6-Pentachlorobenzene							
1,2,3,4,5,6-Hexachlorobenzene							
1,1,1,2,2,2-Hexachloroethane							
1,1,1,2,2-Trichloroethane							
1,1,2,2,3-Pentachloroethane							
1,1,2,2,4-Pentachloroethane							
1,1,2,3,3-Pentachloroethane							
1,1,2,3,4-Pentachloroethane							
1,1,2,3,5-Pentachloroethane							
1,1,2,3,6-Pentachloroethane							
1,1,2,4,4-Pentachloroethane							
1,1,2,4,5-Pentachloroethane							
1,1,2,4,6-Pentachloroethane							
1,1,3,3,3-Pentachloroethane							
1,1,3,3,4-Pentachloroethane							
1,1,3,3,5-Pentachloroethane							
1,1,3,3,6-Pentachloroethane							
1,1,3,4,4-Pentachloroethane							
1,1,3,4,5-Pentachloroethane							
1,1,3,4,6-Pentachloroethane							
1,1,4,4,4-Pentachloroethane							
1,1,4,4,5-Pentachloroethane							
1,1,4,4,6-Pentachloroethane							
1,1,5,5,5-Pentachloroethane							
1,1,5,5,6-Pentachloroethane							
1,1,6,6,6-Pentachloroethane							
1,2,2,3,3-Pentachloroethane							
1,2,2,3,4-Pentachloroethane							
1,2,2,3,5-Pentachloroethane							
1,2,2,3,6-Pentachloroethane							
1,2,2,4,4-Pentachloroethane							
1,2,2,4,5-Pentachloroethane							
1,2,2,4,6-Pentachloroethane							
1,2,3,3,3-Pentachloroethane							
1,2,3,3,4-Pentachloroethane							
1,2,3,3,5-Pentachloroethane							
1,2,3,3,6-Pentachloroethane							
1,2,3,4,4-Pentachloroethane							
1,2,3,4,5-Pentachloroethane							
1,2,3,4,6-Pentachloroethane							
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1,2,3,5,6-Pentachloroethane							
1,2,3,6,6-Pentachloroethane							
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1,2,4,4,5-Pentachloroethane							
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1,3,3,3,3-Pentachloroethane							
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1,3,3,3,6-Pentachloroethane							
1,3,3,4,4-Pentachloroethane							
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1,3,3,4,6-Pentachloroethane							
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1,3,3,5,6-Pentachloroethane							
1,3,3,6,6-Pentachloroethane							
1,3,4,4,4-Pentachloroethane							
1,3,4,4,5-Pentachloroethane							
1,3,4,4,6-Pentachloroethane							
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1,3,4,5,6-Pentachloroethane							
1,3,4,6,6-Pentachloroethane							
1,3,5,5,5-Pentachloroethane							
1,3,5,5,6-Pentachloroethane							
1,3,5,6,6-Pentachloroethane							
1,3,6,6,6-Pentachloroethane							
1,4,4,4,4-Pentachloroethane							
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1,5,5,5,6-Pentachloroethane							
1,5,5,6,6-Pentachloroethane							
1,5,6,6,6-Pentachloroethane							
1,6,6,6,6-Pentachloroethane							

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060177-016
Client Sample ID: HL-0906-116

HL-94-3

Report Date: 07/01/09
Collection Date: 06/10/09 13:15
Date Received: 06/10/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.8	s.u.		0.1		A4500-H B	06/11/09 11:10 / JG
Conductivity	961	umhos/cm		1		A2510 B	06/11/09 11:06 / JG
INORGANICS							
Cyanide, Total	ND	mg/L		0.005		Kelada mod	06/12/09 15:20 / eli-b
Chloride	90	mg/L		1		E300.0	06/18/09 01:03 / hm
Sulfate	160	mg/L		1		E300.0	06/18/09 01:03 / hm
AGGREGATE ORGANICS							
Oxygen Demand, Chemical (COD)	ND	mg/L		1		E410.4	06/12/09 15:00 / stp
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	14.1	mg/L	D	0.1		E353.2	06/11/09 13:50 / stp
METALS, DISSOLVED							
Antimony	ND	mg/L		0.005		E200.8	06/17/09 03:07 / eli-b
Arsenic	ND	mg/L		0.005		E200.8	06/17/09 03:07 / eli-b
Barium	ND	mg/L		0.1		E200.7	06/15/09 14:39 / eli-b
Beryllium	ND	mg/L		0.001		E200.7	06/15/09 14:39 / eli-b
Cadmium	ND	mg/L		0.001		E200.8	06/17/09 03:07 / eli-b
Chromium	ND	mg/L		0.01		E200.7	06/15/09 14:39 / eli-b
Cobalt	ND	mg/L		0.01		E200.7	06/15/09 14:39 / eli-b
Copper	ND	mg/L		0.01		E200.7	06/15/09 14:39 / eli-b
Iron	ND	mg/L		0.03		E200.7	06/15/09 14:39 / eli-b
Lead	ND	mg/L		0.01		E200.8	06/17/09 03:07 / eli-b
Mercury	ND	mg/L		0.001		E200.8	06/18/09 04:00 / eli-b
Nickel	ND	mg/L		0.01		E200.7	06/15/09 14:39 / eli-b
Selenium	ND	mg/L		0.005		E200.8	06/17/09 03:07 / eli-b
Silver	ND	mg/L		0.005		E200.7	06/15/09 14:39 / eli-b
Thallium	ND	mg/L		0.005		E200.8	06/17/09 03:07 / eli-b
Vanadium	ND	mg/L		0.1		E200.7	06/15/09 14:39 / eli-b
Zinc	ND	mg/L		0.01		E200.7	06/15/09 14:39 / eli-b
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	06/15/09 16:32 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	06/15/09 16:32 / abb
Benzene	ND	ug/L		1.0		SW8260B	06/15/09 16:32 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	06/15/09 16:32 / abb
Bromodichloromethane	0.44	ug/L	J	1.0		SW8260B	06/15/09 16:32 / abb
Bromoform	ND	ug/L		1.0		SW8260B	06/15/09 16:32 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	06/15/09 16:32 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	06/15/09 16:32 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
J - Estimated value. The analyte was present but less than reporting limit.



LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060177-016
Client Sample ID: HL-0906-116

Report Date: 07/01/09
Collection Date: 06/10/09 13:15
Date Received: 06/10/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	06/15/09 16:32 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	06/15/09 16:32 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	06/15/09 16:32 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	06/15/09 16:32 / abb
Chloroform	7.3	ug/L		1.0		SW8260B	06/15/09 16:32 / abb
Chloromethane	ND	ug/L		1.0		SW8260B	06/15/09 16:32 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	06/15/09 16:32 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	06/15/09 16:32 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	06/15/09 16:32 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/15/09 16:32 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/15/09 16:32 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	06/15/09 16:32 / abb
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	06/15/09 16:32 / abb
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	06/15/09 16:32 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	06/15/09 16:32 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	06/15/09 16:32 / abb
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	06/15/09 16:32 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	06/15/09 16:32 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	06/15/09 16:32 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/15/09 16:32 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/15/09 16:32 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	06/15/09 16:32 / abb
2-Hexanone	ND	ug/L		20		SW8260B	06/15/09 16:32 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	06/15/09 16:32 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	06/15/09 16:32 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	06/15/09 16:32 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	06/15/09 16:32 / abb
Styrene	ND	ug/L		1.0		SW8260B	06/15/09 16:32 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/15/09 16:32 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/15/09 16:32 / abb
Tetrachloroethene	ND	ug/L		1.0		SW8260B	06/15/09 16:32 / abb
Toluene	ND	ug/L		1.0		SW8260B	06/15/09 16:32 / abb
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	06/15/09 16:32 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	06/15/09 16:32 / abb
Trichloroethene	ND	ug/L		1.0		SW8260B	06/15/09 16:32 / abb
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	06/15/09 16:32 / abb
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	06/15/09 16:32 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	06/15/09 16:32 / abb
Vinyl chloride	ND	ug/L		1.0		SW8260B	06/15/09 16:32 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	06/15/09 16:32 / abb
o-Xylene	ND	ug/L		1.0		SW8260B	06/15/09 16:32 / abb
Xylenes, Total	ND	ug/L		1.0		SW8260B	06/15/09 16:32 / abb
Surr: 1,2-Dichloroethane-d4	99.0	%REC		70-130		SW8260B	06/15/09 16:32 / abb

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



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LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060177-017
Client Sample ID: HL-0906-118

MPC-1

Report Date: 07/01/09
Collection Date: 06/10/09 13:40
Date Received: 06/10/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.4	s.u.		0.1		A4500-H B	06/11/09 11:13 / JG
Conductivity	1080	umhos/cm		1		A2510 B	06/11/09 11:08 / JG
INORGANICS							
Cyanide, Total	0.040	mg/L		0.005		Kelada mod	06/16/09 11:52 / eli-b
Chloride	57	mg/L		1		E300.0	06/18/09 01:20 / hm
Sulfate	200	mg/L		1		E300.0	06/18/09 01:20 / hm
AGGREGATE ORGANICS							
Oxygen Demand, Chemical (COD)	2	mg/L		1		E410.4	06/12/09 15:00 / stp
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	13.1	mg/L	D	0.1		E353.2	06/11/09 13:52 / stp
METALS, DISSOLVED							
Antimony	ND	mg/L		0.005		E200.8	06/17/09 03:14 / eli-b
Arsenic	ND	mg/L		0.005		E200.8	06/17/09 03:14 / eli-b
Barium	ND	mg/L		0.1		E200.7	06/15/09 14:43 / eli-b
Beryllium	ND	mg/L		0.001		E200.7	06/15/09 14:43 / eli-b
Cadmium	ND	mg/L		0.001		E200.8	06/18/09 04:07 / eli-b
Chromium	ND	mg/L		0.01		E200.7	06/15/09 14:43 / eli-b
Cobalt	ND	mg/L		0.01		E200.7	06/15/09 14:43 / eli-b
Copper	ND	mg/L		0.01		E200.7	06/15/09 14:43 / eli-b
Iron	ND	mg/L		0.03		E200.7	06/15/09 14:43 / eli-b
Lead	ND	mg/L		0.01		E200.8	06/17/09 03:14 / eli-b
Mercury	ND	mg/L		0.001		E200.8	06/18/09 04:07 / eli-b
Nickel	ND	mg/L		0.01		E200.7	06/15/09 14:43 / eli-b
Selenium	ND	mg/L		0.005		E200.8	06/17/09 03:14 / eli-b
Silver	ND	mg/L		0.005		E200.7	06/15/09 14:43 / eli-b
Thallium	ND	mg/L		0.005		E200.8	06/17/09 03:14 / eli-b
Vanadium	ND	mg/L		0.1		E200.7	06/15/09 14:43 / eli-b
Zinc	ND	mg/L		0.01		E200.7	06/15/09 14:43 / eli-b
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	06/15/09 17:01 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	06/15/09 17:01 / abb
Benzene	ND	ug/L		1.0		SW8260B	06/15/09 17:01 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	06/15/09 17:01 / abb
Bromodichloromethane	ND	ug/L		1.0		SW8260B	06/15/09 17:01 / abb
Bromoform	ND	ug/L		1.0		SW8260B	06/15/09 17:01 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	06/15/09 17:01 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	06/15/09 17:01 / abb

Report RL - Analyte reporting limit.

Definitions: QCL - Quality control limit.

D - RL increased due to sample matrix interference.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060177-017
Client Sample ID: HL-0906-118

Report Date: 07/01/09
Collection Date: 06/10/09 13:40
Date Received: 06/10/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	06/15/09 17:01 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	06/15/09 17:01 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	06/15/09 17:01 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	06/15/09 17:01 / abb
Chloroform	2.0	ug/L		1.0		SW8260B	06/15/09 17:01 / abb
Chloromethane	ND	ug/L		1.0		SW8260B	06/15/09 17:01 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	06/15/09 17:01 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	06/15/09 17:01 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	06/15/09 17:01 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/15/09 17:01 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/15/09 17:01 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	06/15/09 17:01 / abb
Dichlorodifluoromethane	0.74	ug/L	J	1.0		SW8260B	06/15/09 17:01 / abb
1,1-Dichloroethane	2.3	ug/L		1.0		SW8260B	06/15/09 17:01 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	06/15/09 17:01 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	06/15/09 17:01 / abb
cis-1,2-Dichloroethene	1.4	ug/L		1.0		SW8260B	06/15/09 17:01 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	06/15/09 17:01 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	06/15/09 17:01 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/15/09 17:01 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/15/09 17:01 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	06/15/09 17:01 / abb
2-Hexanone	ND	ug/L		20		SW8260B	06/15/09 17:01 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	06/15/09 17:01 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	06/15/09 17:01 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	06/15/09 17:01 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	06/15/09 17:01 / abb
Styrene	ND	ug/L		1.0		SW8260B	06/15/09 17:01 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/15/09 17:01 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/15/09 17:01 / abb
Tetrachloroethene	12	ug/L		1.0		SW8260B	06/15/09 17:01 / abb
Toluene	ND	ug/L		1.0		SW8260B	06/15/09 17:01 / abb
1,1,1-Trichloroethane	0.31	ug/L	J	1.0		SW8260B	06/15/09 17:01 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	06/15/09 17:01 / abb
Trichloroethene	2.2	ug/L		1.0		SW8260B	06/15/09 17:01 / abb
Trichlorofluoromethane	1.1	ug/L		1.0		SW8260B	06/15/09 17:01 / abb
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	06/15/09 17:01 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	06/15/09 17:01 / abb
Vinyl chloride	ND	ug/L		1.0		SW8260B	06/15/09 17:01 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	06/15/09 17:01 / abb
o-Xylene	ND	ug/L		1.0		SW8260B	06/15/09 17:01 / abb
Xylenes, Total	ND	ug/L		1.0		SW8260B	06/15/09 17:01 / abb
Surr: 1,2-Dichloroethane-d4	96.0	%REC		70-130		SW8260B	06/15/09 17:01 / abb

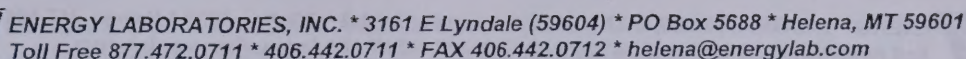
Report RL - Analyte reporting limit.

Definitions: QCL - Quality control limit.

J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060177-017
Client Sample ID: HL-0906-118

Report Date: 07/01/09
Collection Date: 06/10/09 13:40
DateReceived: 06/10/09
Matrix: Aqueous

MPC-1

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Surr: Dibromofluoromethane	87.0	%REC		70-130		SW8260B	06/15/09 17:01 / abb
Surr: p-Bromofluorobenzene	111	%REC		70-130		SW8260B	06/15/09 17:01 / abb
Surr: Toluene-d8	107	%REC		70-130		SW8260B	06/15/09 17:01 / abb

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060177-018
Client Sample ID: HL-0906-119

Field
Blank

Report Date: 07/01/09
Collection Date: 06/10/09 14:30
Date Received: 06/10/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	5.7	s.u.		0.1		A4500-H B	06/11/09 11:17 / JG
Conductivity	1	umhos/cm		1		A2510 B	06/11/09 11:13 / JG
INORGANICS							
Cyanide, Total	ND	mg/L		0.005		Kelada mod	06/12/09 15:24 / eli-b
Chloride	ND	mg/L		1		E300.0	06/18/09 01:36 / hm
Sulfate	ND	mg/L		1		E300.0	06/18/09 01:36 / hm
AGGREGATE ORGANICS							
Oxygen Demand, Chemical (COD)	ND	mg/L		1		E410.4	06/12/09 15:00 / stp
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.05		E353.2	06/11/09 13:54 / stp
METALS, DISSOLVED							
Antimony	ND	mg/L		0.005		E200.8	06/17/09 03:21 / eli-b
Arsenic	ND	mg/L		0.005		E200.8	06/17/09 03:21 / eli-b
Barium	ND	mg/L		0.1		E200.7	06/16/09 17:08 / eli-b
Beryllium	ND	mg/L		0.001		E200.7	06/16/09 17:08 / eli-b
Cadmium	ND	mg/L		0.001		E200.7	06/16/09 17:08 / eli-b
Chromium	ND	mg/L		0.01		E200.7	06/16/09 17:08 / eli-b
Cobalt	ND	mg/L		0.01		E200.7	06/16/09 17:08 / eli-b
Copper	ND	mg/L		0.01		E200.7	06/16/09 17:08 / eli-b
Iron	ND	mg/L		0.03		E200.7	06/16/09 17:08 / eli-b
Lead	ND	mg/L		0.01		E200.8	06/17/09 03:21 / eli-b
Mercury	ND	mg/L		0.001		E200.8	06/18/09 04:15 / eli-b
Nickel	ND	mg/L		0.01		E200.7	06/16/09 17:08 / eli-b
Selenium	ND	mg/L		0.005		E200.8	06/17/09 03:21 / eli-b
Silver	ND	mg/L		0.005		E200.7	06/16/09 17:08 / eli-b
Thallium	ND	mg/L		0.005		E200.8	06/17/09 03:21 / eli-b
Vanadium	ND	mg/L		0.1		E200.7	06/16/09 17:08 / eli-b
Zinc	ND	mg/L		0.01		E200.7	06/16/09 17:08 / eli-b
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	06/15/09 16:02 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	06/15/09 16:02 / abb
Benzene	ND	ug/L		1.0		SW8260B	06/15/09 16:02 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	06/15/09 16:02 / abb
Bromodichloromethane	ND	ug/L		1.0		SW8260B	06/15/09 16:02 / abb
Bromoform	ND	ug/L		1.0		SW8260B	06/15/09 16:02 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	06/15/09 16:02 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	06/15/09 16:02 / abb

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



ENERGY LABORATORIES, INC. * 3161 E Lyndale (59604) * PO Box 5688 * Helena, MT 59601
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LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060177-018
Client Sample ID: HL-0906-119

Fold
Blank

Report Date: 07/01/09
Collection Date: 06/10/09 14:30
Date Received: 06/10/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	06/15/09 16:02 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	06/15/09 16:02 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	06/15/09 16:02 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	06/15/09 16:02 / abb
Chloroform	0.50	ug/L	J	1.0		SW8260B	06/15/09 16:02 / abb
Chloromethane	ND	ug/L		1.0		SW8260B	06/15/09 16:02 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	06/15/09 16:02 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	06/15/09 16:02 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	06/15/09 16:02 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/15/09 16:02 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/15/09 16:02 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	06/15/09 16:02 / abb
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	06/15/09 16:02 / abb
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	06/15/09 16:02 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	06/15/09 16:02 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	06/15/09 16:02 / abb
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	06/15/09 16:02 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	06/15/09 16:02 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	06/15/09 16:02 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/15/09 16:02 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/15/09 16:02 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	06/15/09 16:02 / abb
2-Hexanone	ND	ug/L		20		SW8260B	06/15/09 16:02 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	06/15/09 16:02 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	06/15/09 16:02 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	06/15/09 16:02 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	06/15/09 16:02 / abb
Styrene	ND	ug/L		1.0		SW8260B	06/15/09 16:02 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/15/09 16:02 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/15/09 16:02 / abb
Tetrachloroethene	ND	ug/L		1.0		SW8260B	06/15/09 16:02 / abb
Toluene	ND	ug/L		1.0		SW8260B	06/15/09 16:02 / abb
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	06/15/09 16:02 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	06/15/09 16:02 / abb
Trichloroethene	ND	ug/L		1.0		SW8260B	06/15/09 16:02 / abb
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	06/15/09 16:02 / abb
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	06/15/09 16:02 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	06/15/09 16:02 / abb
Vinyl chloride	ND	ug/L		1.0		SW8260B	06/15/09 16:02 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	06/15/09 16:02 / abb
o-Xylene	ND	ug/L		1.0		SW8260B	06/15/09 16:02 / abb
Xylenes, Total	ND	ug/L		1.0		SW8260B	06/15/09 16:02 / abb
Surr: 1,2-Dichloroethane-d4	96.0	%REC		70-130		SW8260B	06/15/09 16:02 / abb

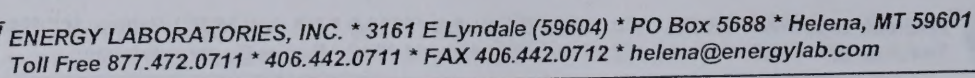
Report RL - Analyte reporting limit.

Definitions: QCL - Quality control limit.

J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060177-018
Client Sample ID: HL-0906-119

Report Date: 07/01/09
Collection Date: 06/10/09 14:30
DateReceived: 06/10/09
Matrix: Aqueous

Fold
Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Surr: Dibromofluoromethane	85.0	%REC		70-130		SW8260B	06/15/09 16:02 / abb
Surr: p-Bromofluorobenzene	125	%REC		70-130		SW8260B	06/15/09 16:02 / abb
Surr: Toluene-d8	113	%REC		70-130		SW8260B	06/15/09 16:02 / abb

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



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QA/QC Summary Report

Client: Hydrometrics Inc-Helena

Report Date: 07/01/09

Project: 1273 City of Helena

Work Order: H09060177

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Batch: 090611A-COND-PROBE-W										
Method: A2510 B										
Sample ID: LCS1_090611A		Laboratory Control Sample				Run: COND_090611A				06/11/09 10:49
Conductivity		1410	umhos/cm	1.0	100	90	110			
Sample ID: H09060177-015BDUP		Sample Duplicate				Run: COND_090611A				06/11/09 11:03
Conductivity		1190	umhos/cm	1.0				0.1	10	
Batch: 090611A-PH-W										
Method: A4500-H B										
Sample ID: LCS1_090611A		Laboratory Control Sample				Run: PH_090611A				06/11/09 10:50
pH		7.02	s.u.	0.10	100	99	101			
Sample ID: H09060177-015BDUP		Sample Duplicate				Run: PH_090611A				06/11/09 11:08
pH		7.56	s.u.	0.10				0.3	2	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Client: Hydrometrics Inc-Helena

Report Date: 07/01/09

Project: 1273 City of Helena

Work Order: H09060177

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7								Analytical Run: SUB-B131183		
Sample ID: ICV		10 Continuing Calibration Verification Standard					06/15/09 12:29			
Barium		2.50	mg/L		0.10	100	95	105		
Beryllium		1.27	mg/L		0.010	102	95	105		
Chromium		2.49	mg/L		0.050	99	95	105		
Cobalt		2.50	mg/L		0.020	100	95	105		
Copper		2.53	mg/L		0.010	101	95	105		
Iron		2.59	mg/L		0.18	104	95	105		
Nickel		2.63	mg/L		0.050	105	95	105		
Silver		0.507	mg/L		0.010	101	95	105		
Vanadium		2.51	mg/L		0.10	100	95	105		
Zinc		2.57	mg/L		0.010	103	95	105		
Method: E200.7								Batch: B_R131183		
Sample ID: MB-SPDIS090615A		10 Method Blank			Run: SUB-B131183			06/15/09 12:38		
Barium		ND	mg/L		0.0001					
Beryllium		0.0001	mg/L		9E-05					
Chromium		ND	mg/L		0.002					
Cobalt		ND	mg/L		0.001					
Copper		ND	mg/L		0.0009					
Iron		ND	mg/L		0.002					
Nickel		ND	mg/L		0.002					
Silver		ND	mg/L		0.002					
Vanadium		ND	mg/L		0.003					
Zinc		0.002	mg/L		0.002					
Sample ID: LFB-SPDIS090615A		10 Laboratory Fortified Blank			Run: SUB-B131183			06/15/09 12:42		
Barium		1.03	mg/L		0.10	103	85	115		
Beryllium		0.510	mg/L		0.010	102	85	115		
Chromium		1.02	mg/L		0.050	102	85	115		
Cobalt		1.01	mg/L		0.020	101	85	115		
Copper		1.02	mg/L		0.010	102	85	115		
Iron		5.25	mg/L		0.030	105	85	115		
Nickel		1.07	mg/L		0.050	107	85	115		
Silver		0.505	mg/L		0.010	101	85	115		
Vanadium		0.989	mg/L		0.10	99	85	115		
Zinc		1.04	mg/L		0.010	104	85	115		
Sample ID: H09060177-017C		10 Sample Matrix Spike			Run: SUB-B131183			06/15/09 14:47		
Barium		1.05	mg/L		0.10	99	70	130		
Beryllium		0.486	mg/L		0.0010	97	70	130		
Chromium		0.981	mg/L		0.010	98	70	130		
Cobalt		0.967	mg/L		0.010	97	70	130		
Copper		1.01	mg/L		0.010	101	70	130		
Iron		5.01	mg/L		0.030	100	70	130		
Nickel		1.04	mg/L		0.010	104	70	130		

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Client: Hydrometrics Inc-Helena

Report Date: 07/01/09

Project: 1273 City of Helena

Work Order: H09060177

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7										Batch: B_R131183
Sample ID: H09060177-017C	10	Sample Matrix Spike		Run: SUB-B131183				06/15/09 14:47		
Silver		0.336	mg/L	0.0050	67	70	130			S
Vanadium		0.953	mg/L	0.10	95	70	130			
Zinc		1.01	mg/L	0.010	101	70	130			
Sample ID: H09060177-017C	10	Sample Matrix Spike Duplicate		Run: SUB-B131183				06/15/09 14:51		
Barium		1.03	mg/L	0.10	98	70	130	1.8	20	
Beryllium		0.487	mg/L	0.0010	97	70	130	0.3	20	
Chromium		0.978	mg/L	0.010	98	70	130	0.2	20	
Cobalt		0.968	mg/L	0.010	97	70	130	0.1	20	
Copper		1.00	mg/L	0.010	100	70	130	0.4	20	
Iron		5.05	mg/L	0.030	101	70	130	0.7	20	
Nickel		1.04	mg/L	0.010	104	70	130	0.4	20	
Silver		0.335	mg/L	0.0050	67	70	130	0.3	20	S
Vanadium		0.957	mg/L	0.10	95	70	130	0.4	20	
Zinc		1.02	mg/L	0.010	102	70	130	0.6	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.



QA/QC Summary Report

Client: Hydrometrics Inc-Helena

Project: 1273 City of Helena

Report Date: 07/01/09

Work Order: H09060177

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7										
Sample ID: ICV										
11 Continuing Calibration Verification Standard										
Barium		2.51	mg/L	0.10	100	95	105			
Beryllium		1.29	mg/L	0.010	103	95	105			
Cadmium		2.53	mg/L	0.010	101	95	105			
Chromium		2.51	mg/L	0.050	100	95	105			
Cobalt		2.54	mg/L	0.020	102	95	105			
Copper		2.57	mg/L	0.010	103	95	105			
Iron		2.60	mg/L	0.18	104	95	105			
Nickel		2.63	mg/L	0.050	105	95	105			
Silver		0.503	mg/L	0.010	101	95	105			
Vanadium		2.55	mg/L	0.10	102	95	105			
Zinc		2.59	mg/L	0.010	103	95	105			
Method: E200.7										
Sample ID: MB-SPDIS090616A										
11 Method Blank										
Barium		0.0003	mg/L	0.0001						
Beryllium		0.0001	mg/L	9E-05						
Cadmium		ND	mg/L	0.0009						
Chromium		ND	mg/L	0.002						
Cobalt		ND	mg/L	0.001						
Copper		ND	mg/L	0.0009						
Iron		ND	mg/L	0.002						
Nickel		ND	mg/L	0.002						
Silver		ND	mg/L	0.002						
Vanadium		ND	mg/L	0.003						
Zinc		0.003	mg/L	0.002						
Sample ID: LFB-SPDIS090616A										
11 Laboratory Fortified Blank										
Barium		0.999	mg/L	0.10	100	85	115			
Beryllium		0.503	mg/L	0.010	100	85	115			
Cadmium		0.487	mg/L	0.010	97	85	115			
Chromium		0.999	mg/L	0.050	100	85	115			
Cobalt		0.993	mg/L	0.020	99	85	115			
Copper		1.02	mg/L	0.010	102	85	115			
Iron		5.15	mg/L	0.030	103	85	115			
Nickel		1.03	mg/L	0.050	103	85	115			
Silver		0.500	mg/L	0.010	100	85	115			
Vanadium		0.972	mg/L	0.10	97	85	115			
Zinc		1.01	mg/L	0.010	101	85	115			
Sample ID: H09060177-018C										
11 Sample Matrix Spike										
Barium		0.980	mg/L	0.10	98	70	130			
Beryllium		0.481	mg/L	0.0010	96	70	130			
Cadmium		0.470	mg/L	0.0010	94	70	130			
Chromium		0.968	mg/L	0.010	97	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



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QA/QC Summary Report

Client: Hydrometrics Inc-Helena

Report Date: 07/01/09

Project: 1273 City of Helena

Work Order: H09060177

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7										Batch: B_R131262
Sample ID: H09060177-018C	11	Sample Matrix Spike		Run: SUB-B131262				06/16/09 17:12		
Cobalt		0.959	mg/L	0.010	96	70	130			
Copper		0.971	mg/L	0.010	97	70	130			
Iron		5.02	mg/L	0.030	100	70	130			
Nickel		1.02	mg/L	0.010	102	70	130			
Silver		0.369	mg/L	0.0050	73	70	130			
Vanadium		0.957	mg/L	0.10	96	70	130			
Zinc		1.00	mg/L	0.010	100	70	130			
Sample ID: H09060177-018C	11	Sample Matrix Spike Duplicate		Run: SUB-B131262				06/16/09 17:16		
Barium		0.989	mg/L	0.10	99	70	130	0.9	20	
Beryllium		0.486	mg/L	0.0010	97	70	130	0.9	20	
Cadmium		0.475	mg/L	0.0010	95	70	130	1.2	20	
Chromium		0.983	mg/L	0.010	98	70	130	1.5	20	
Cobalt		0.972	mg/L	0.010	97	70	130	1.4	20	
Copper		0.975	mg/L	0.010	97	70	130	0.4	20	
Iron		5.07	mg/L	0.030	101	70	130	1.1	20	
Nickel		1.03	mg/L	0.010	103	70	130	0.6	20	
Silver		0.375	mg/L	0.0050	74	70	130	1.7	20	
Vanadium		0.967	mg/L	0.10	97	70	130	1.1	20	
Zinc		1.01	mg/L	0.010	101	70	130	0.7	20	
Sample ID: H09060178-009B	11	Sample Matrix Spike		Run: SUB-B131262				06/16/09 18:08		
Barium		1.02	mg/L	0.10	95	70	130			
Beryllium		0.477	mg/L	0.0010	95	70	130			
Cadmium		0.464	mg/L	0.0010	93	70	130			
Chromium		0.960	mg/L	0.010	96	70	130			
Cobalt		0.948	mg/L	0.010	95	70	130			
Copper		0.972	mg/L	0.010	96	70	130			
Iron		5.00	mg/L	0.030	100	70	130			
Nickel		1.00	mg/L	0.010	100	70	130			
Silver		0.312	mg/L	0.0050	62	70	130			S
Vanadium		0.948	mg/L	0.10	95	70	130			
Zinc		0.991	mg/L	0.010	99	70	130			
Sample ID: H09060178-009B	11	Sample Matrix Spike Duplicate		Run: SUB-B131262				06/16/09 18:12		
Barium		1.05	mg/L	0.10	98	70	130	2.7	20	
Beryllium		0.474	mg/L	0.0010	95	70	130	0.7	20	
Cadmium		0.462	mg/L	0.0010	92	70	130	0.5	20	
Chromium		0.959	mg/L	0.010	96	70	130	0.1	20	
Cobalt		0.943	mg/L	0.010	94	70	130	0.4	20	
Copper		0.974	mg/L	0.010	97	70	130	0.2	20	
Iron		4.96	mg/L	0.030	99	70	130	0.8	20	
Nickel		1.00	mg/L	0.010	100	70	130	0.3	20	
Silver		0.314	mg/L	0.0050	63	70	130	0.8	20	S

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.



QA/QC Summary Report

Client: Hydrometrics Inc-Helena

Report Date: 07/01/09

Project: 1273 City of Helena

Work Order: H09060177

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8								Analytical Run: SUB-B131243		
Sample ID: QCS-090602A,090401 6 Initial Calibration Verification Standard 06/16/09 11:19										
Antimony		0.048	mg/L	0.050	97	90	110			
Arsenic		0.049	mg/L	0.0050	99	90	110			
Cadmium		0.026	mg/L	0.0010	102	90	110			
Lead		0.050	mg/L	0.010	100	90	110			
Selenium		0.050	mg/L	0.0050	100	90	110			
Thallium		0.050	mg/L	0.10	100	90	110			
Sample ID: QCS-090602A,090401 6 Initial Calibration Verification Standard 06/17/09 00:20										
Antimony		0.049	mg/L	0.050	97	90	110			
Arsenic		0.049	mg/L	0.0050	98	90	110			
Cadmium		0.026	mg/L	0.0010	103	90	110			
Lead		0.050	mg/L	0.010	100	90	110			
Selenium		0.050	mg/L	0.0050	100	90	110			
Thallium		0.050	mg/L	0.10	100	90	110			
Method: E200.8								Batch: B_R131243		
Sample ID: LRB 6 Method Blank Run: SUB-B131243 06/16/09 13:39										
Antimony		ND	mg/L	1E-05						
Arsenic		ND	mg/L	4E-05						
Cadmium		ND	mg/L	1E-05						
Lead		ND	mg/L	4E-05						
Selenium		ND	mg/L	4E-05						
Thallium		ND	mg/L	1E-05						
Sample ID: LFB 6 Laboratory Fortified Blank Run: SUB-B131243 06/16/09 13:46										
Antimony		0.050	mg/L	0.050	100	85	115			
Arsenic		0.050	mg/L	0.0050	100	85	115			
Cadmium		0.049	mg/L	0.0010	99	85	115			
Lead		0.050	mg/L	0.010	101	85	115			
Selenium		0.050	mg/L	0.0050	99	85	115			
Thallium		0.050	mg/L	0.10	100	85	115			
Sample ID: B09061274-007CMS 6 Sample Matrix Spike Run: SUB-B131243 06/16/09 16:49										
Antimony		0.0515	mg/L	0.0050	101	70	130			
Arsenic		0.0533	mg/L	0.0050	99	70	130			
Cadmium		0.0498	mg/L	0.0010	100	70	130			
Lead		0.0506	mg/L	0.010	101	70	130			
Selenium		0.0499	mg/L	0.0050	100	70	130			
Thallium		0.0498	mg/L	0.0050	100	70	130			
Sample ID: B09061274-007CMSD 6 Sample Matrix Spike Duplicate Run: SUB-B131243 06/16/09 16:56										
Antimony		0.0503	mg/L	0.0050	99	70	130	2.4	20	
Arsenic		0.0525	mg/L	0.0050	97	70	130	1.5	20	
Cadmium		0.0490	mg/L	0.0010	98	70	130	1.6	20	
Lead		0.0503	mg/L	0.010	100	70	130	0.5	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Client: Hydrometrics Inc-Helena

Project: 1273 City of Helena

Report Date: 07/01/09

Work Order: H09060177

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Batch: B_R131243										
Method: E200.8										
Sample ID: B09061274-007CMSD	6	Sample Matrix Spike Duplicate				Run: SUB-B131243				06/16/09 16:56
Selenium		0.0495	mg/L	0.0050	99	70	130	0.8	20	
Thallium		0.0498	mg/L	0.0050	100	70	130	0.1	20	
Sample ID: B09061189-004BMS	6	Sample Matrix Spike				Run: SUB-B131243				06/17/09 01:37
Antimony		0.982	mg/L	0.0050	98	70	130			
Arsenic		0.965	mg/L	0.0050	96	70	130			
Cadmium		0.972	mg/L	0.0010	97	70	130			
Lead		0.976	mg/L	0.010	98	70	130			
Selenium		0.967	mg/L	0.0050	97	70	130			
Thallium		0.973	mg/L	0.0050	97	70	130			
Sample ID: B09061189-004BMSD	6	Sample Matrix Spike Duplicate				Run: SUB-B131243				06/17/09 01:44
Antimony		0.982	mg/L	0.0050	98	70	130	0	20	
Arsenic		0.989	mg/L	0.0050	98	70	130	2.4	20	
Cadmium		0.966	mg/L	0.0010	96	70	130	0.6	20	
Lead		0.984	mg/L	0.010	98	70	130	0.8	20	
Selenium		0.963	mg/L	0.0050	96	70	130	0.5	20	
Thallium		0.983	mg/L	0.0050	98	70	130	1.1	20	
Sample ID: B09061302-001BMS	6	Sample Matrix Spike				Run: SUB-B131243				06/17/09 03:35
Antimony		0.0493	mg/L	0.0050	98	70	130			
Arsenic		0.0487	mg/L	0.0050	97	70	130			
Cadmium		0.0489	mg/L	0.0010	98	70	130			
Lead		0.0494	mg/L	0.010	99	70	130			
Selenium		0.0492	mg/L	0.0050	98	70	130			
Thallium		0.0494	mg/L	0.0050	99	70	130			
Sample ID: B09061302-001BMSD	6	Sample Matrix Spike Duplicate				Run: SUB-B131243				06/17/09 03:41
Antimony		0.0489	mg/L	0.0050	98	70	130	0.6	20	
Arsenic		0.0485	mg/L	0.0050	97	70	130	0.5	20	
Cadmium		0.0484	mg/L	0.0010	97	70	130	1.2	20	
Lead		0.0490	mg/L	0.010	98	70	130	0.7	20	
Selenium		0.0485	mg/L	0.0050	97	70	130	1.5	20	
Thallium		0.0491	mg/L	0.0050	98	70	130	0.6	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Client: Hydrometrics Inc-Helena

Report Date: 07/01/09

Project: 1273 City of Helena

Work Order: H09060177

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8								Analytical Run: SUB-B131362		
Sample ID: QCS-090602A,090401	2	Initial Calibration Verification Standard								06/17/09 22:07
Cadmium		0.026	mg/L	0.0010	102	90	110			
Mercury		0.0019	mg/L	0.0010	94	90	110			
Method: E200.8								Batch: B_R131362		
Sample ID: LRB	2	Method Blank				Run: SUB-B131362			06/17/09 13:35	
Cadmium		ND	mg/L	1E-05						
Mercury		ND	mg/L	1E-05						
Sample ID: LFB	2	Laboratory Fortified Blank				Run: SUB-B131362			06/17/09 13:42	
Cadmium		0.050	mg/L	0.0010	100	85	115			
Mercury		0.00099	mg/L	0.0010	99	85	115			
Sample ID: H09060177-012C	2	Sample Matrix Spike				Run: SUB-B131362			06/18/09 02:48	
Cadmium		0.0482	mg/L	0.0010	93	70	130			
Mercury		0.00104	mg/L	0.0010	104	70	130			
Sample ID: H09060177-012C	2	Sample Matrix Spike Duplicate				Run: SUB-B131362			06/18/09 03:24	
Cadmium		0.0506	mg/L	0.0010	98	70	130	4.8	20	
Mercury		0.00117	mg/L	0.0010	117	70	130	12	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Client: Hydrometrics Inc-Helena

Report Date: 07/01/09

Project: 1273 City of Helena

Work Order: H09060177

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E300.0										Analytical Run: IC101-H_090616A
Sample ID: ICV	2	Initial Calibration Verification Standard								06/16/09 15:40
Chloride		2.5	mg/L	1.0	100	90	110			
Sulfate		9.7	mg/L	1.0	97	90	110			
Sample ID: CCV	2	Continuing Calibration Verification Standard								06/17/09 20:07
Chloride		25	mg/L	1.0	101	90	110			
Sulfate		51	mg/L	1.0	101	90	110			
Sample ID: CCV	2	Continuing Calibration Verification Standard								06/17/09 23:57
Chloride		26	mg/L	1.0	102	90	110			
Sulfate		51	mg/L	1.0	101	90	110			
Method: E300.0										Batch: R54350
Sample ID: LCS	2	Laboratory Control Sample				Run: IC101-H_090616A			06/16/09 15:56	
Chloride		92	mg/L	1.0	106	90	110			
Sulfate		27	mg/L	1.0	95	90	110			
Sample ID: LFB	2	Laboratory Fortified Blank				Run: IC101-H_090616A			06/16/09 16:12	
Chloride		5.2	mg/L	1.0	103	90	110			
Sulfate		9.7	mg/L	1.0	93	90	110			
Sample ID: MBLK	2	Method Blank				Run: IC101-H_090616A			06/16/09 16:29	
Chloride		ND	mg/L	0.05						
Sulfate		0.5	mg/L	0.1						
Sample ID: H09060123-005A MS	2	Sample Matrix Spike				Run: IC101-H_090616A			06/17/09 20:57	
Chloride		27	mg/L	1.0	105	90	110			
Sulfate		92	mg/L	1.0	109	90	110			
Sample ID: H09060123-005A MSD	2	Sample Matrix Spike Duplicate				Run: IC101-H_090616A			06/17/09 21:13	
Chloride		27	mg/L	1.0	104	90	110	1	20	
Sulfate		92	mg/L	1.0	109	90	110	0.2	20	
Sample ID: H09060177-018B MS	2	Sample Matrix Spike				Run: IC101-H_090616A			06/18/09 01:52	
Chloride		26	mg/L	1.0	104	90	110			
Sulfate		52	mg/L	1.0	103	90	110			
Sample ID: H09060177-018B MSD	2	Sample Matrix Spike Duplicate				Run: IC101-H_090616A			06/18/09 02:09	
Chloride		26	mg/L	1.0	103	90	110	0.6	20	
Sulfate		52	mg/L	1.0	102	90	110	0.3	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Client: Hydrometrics Inc-Helena

Report Date: 07/01/09

Project: 1273 City of Helena

Work Order: H09060177

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E353.2								Analytical Run: NUTRIENTS_090611A		
Sample ID: ICV-1		Initial Calibration Verification Standard								06/11/09 12:58
Nitrogen, Nitrate+Nitrite as N		1.050	mg/L	0.050	105	90	110			
Sample ID: CCV-20		Continuing Calibration Verification Standard								06/11/09 13:36
Nitrogen, Nitrate+Nitrite as N		0.5200	mg/L	0.050	104	90	110			
Method: E353.2								Batch: A2009-06-11_5_NO3_01		
Sample ID: LCS-2		Laboratory Control Sample				Run: NUTRIENTS_090611A				06/11/09 13:00
Nitrogen, Nitrate+Nitrite as N		16.20	mg/L	0.095	107	90	110			
Sample ID: LFB-3		Laboratory Fortified Blank				Run: NUTRIENTS_090611A				06/11/09 13:02
Nitrogen, Nitrate+Nitrite as N		0.5300	mg/L	0.050	106	90	110			
Sample ID: MBLK-7		Method Blank				Run: NUTRIENTS_090611A				06/11/09 13:10
Nitrogen, Nitrate+Nitrite as N		ND	mg/L	0.010						
Sample ID: H09060177-018DMS		Sample Matrix Spike				Run: NUTRIENTS_090611A				06/11/09 13:56
Nitrogen, Nitrate+Nitrite as N		1.060	mg/L	0.050	106	90	110			
Sample ID: H09060177-018DMSD		Sample Matrix Spike Duplicate				Run: NUTRIENTS_090611A				06/11/09 13:58
Nitrogen, Nitrate+Nitrite as N		1.050	mg/L	0.050	105	90	110	0.9	20	
Method: E410.4								Analytical Run: SPECTRO_090612A		
Sample ID: CCV		Continuing Calibration Verification Standard								06/12/09 15:00
Oxygen Demand, Chemical (COD)		50	mg/L	1.0	101	90	110			
Sample ID: CCV		Continuing Calibration Verification Standard								06/12/09 15:00
Oxygen Demand, Chemical (COD)		49	mg/L	1.0	98	90	110			
Method: E410.4								Batch: R54236		
Sample ID: LCS		Laboratory Control Sample				Run: SPECTRO_090612A				06/12/09 15:00
Oxygen Demand, Chemical (COD)		310	mg/L	4.7	105	90	110			
Sample ID: MBLK		Method Blank				Run: SPECTRO_090612A				06/12/09 15:00
Oxygen Demand, Chemical (COD)		ND	mg/L	0.9						
Sample ID: H09060101-005BMS		Sample Matrix Spike				Run: SPECTRO_090612A				06/12/09 15:00
Oxygen Demand, Chemical (COD)		52	mg/L	1.0	99	90	110			
Sample ID: H09060101-005BMSD		Sample Matrix Spike Duplicate				Run: SPECTRO_090612A				06/12/09 15:00
Oxygen Demand, Chemical (COD)		53	mg/L	1.0	99	90	110	0.6	20	
Sample ID: H09060177-016DMS		Sample Matrix Spike				Run: SPECTRO_090612A				06/12/09 15:00
Oxygen Demand, Chemical (COD)		51	mg/L	1.0	100	90	110			
Sample ID: H09060177-016DMSD		Sample Matrix Spike Duplicate				Run: SPECTRO_090612A				06/12/09 15:00
Oxygen Demand, Chemical (COD)		51	mg/L	1.0	99	90	110	0.5	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Client: Hydrometrics Inc-Helena

Project: 1273 City of Helena

Report Date: 07/01/09

Work Order: H09060177

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: Kelada mod										Batch: B_39485
Sample ID: LCS-39485	Laboratory Control Sample			Run: SUB-B131167			06/15/09 13:23			
Cyanide, Total		0.105	mg/L	0.0050	105	90	110			
Sample ID: MB-39485	Method Blank			Run: SUB-B131167			06/15/09 13:28			
Cyanide, Total		ND	mg/L	0.003						
Sample ID: B09060912-001EMS	Sample Matrix Spike			Run: SUB-B131167			06/15/09 14:49			
Cyanide, Total		0.103	mg/L	0.0050	99	90	110			
Sample ID: B09060912-001EMSD	Sample Matrix Spike Duplicate			Run: SUB-B131167			06/15/09 14:51			
Cyanide, Total		0.109	mg/L	0.0050	104	90	110	5	10	
Sample ID: LCS-39485	Laboratory Control Sample			Run: SUB-B131213			06/16/09 11:32			
Cyanide, Total		0.0980	mg/L	0.0050	98	90	110			
Sample ID: MB-39485	Method Blank			Run: SUB-B131213			06/16/09 11:34			
Cyanide, Total		ND	mg/L	0.003						
Sample ID: B09061159-003EMS	Sample Matrix Spike			Run: SUB-B131213			06/16/09 11:39			
Cyanide, Total		0.0856	mg/L	0.0050	86	90	110			S
Sample ID: B09061159-003EMSD	Sample Matrix Spike Duplicate			Run: SUB-B131213			06/16/09 11:41			
Cyanide, Total		0.0847	mg/L	0.0050	85	90	110	1	10	S

Qualifiers:

RL - Analyte reporting limit.

S - Spike recovery outside of advisory limits.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Client: Hydrometrics Inc-Helena

Report Date: 07/01/09

Project: 1273 City of Helena

Work Order: H09060177

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: Kelada mod								Analytical Run: SUB-B131074		
Sample ID: ICV-1		Initial Calibration Verification Standard								06/12/09 10:49
Cyanide, Total		0.149	mg/L	0.0050	100	90	110			
Method: Kelada mod								Batch: B_R131074		
Sample ID: LFB-2		Laboratory Fortified Blank								06/12/09 10:51
Cyanide, Total		0.109	mg/L	0.0050	109	90	110			
Sample ID: MBLK-3		Method Blank								06/12/09 10:53
Cyanide, Total		ND	mg/L	0.003						
Sample ID: B09061159-003EMS		Sample Matrix Spike								06/12/09 13:01
Cyanide, Total		0.0623	mg/L	0.0050	62	90	110			S
Sample ID: B09061159-003EMSD		Sample Matrix Spike Duplicate								06/12/09 13:03
Cyanide, Total		0.0603	mg/L	0.0050	60	90	110	3.2	10	S
Sample ID: H09060177-012E		Sample Matrix Spike								06/12/09 15:10
Cyanide, Total		0.102	mg/L	0.0050	102	90	110			
Sample ID: H09060177-012E		Sample Matrix Spike Duplicate								06/12/09 15:11
Cyanide, Total		0.108	mg/L	0.0050	108	90	110	5.1	10	
Sample ID: B09061258-001BMS		Sample Matrix Spike								06/12/09 15:39
Cyanide, Total		0.108	mg/L	0.0050	108	90	110			
Sample ID: B09061258-001BMDS		Sample Matrix Spike Duplicate								06/12/09 15:41
Cyanide, Total		0.112	mg/L	0.0050	112	90	110	3.3	10	S
Method: Kelada mod								Analytical Run: SUB-B131213		
Sample ID: ICV-1		Initial Calibration Verification Standard								06/16/09 11:17
Cyanide, Total		0.147	mg/L	0.0050	98	90	110			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.



QA/QC Summary Report

Client: Hydrometrics Inc-Helena

Project: 1273 City of Helena

Report Date: 07/01/09

Work Order: H09060177

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Analytical Run: 1SATURN_090612A
Sample ID: CCV061209A										06/12/09 09:56
54 Continuing Calibration Verification Standard										
Acetone		48.4	ug/L	20	97	70	130			
Acrylonitrile		52.8	ug/L	20	106	70	130			
Benzene		4.12	ug/L	1.0	82	70	130			
Bromochloromethane		4.96	ug/L	1.0	99	70	130			
Bromodichloromethane		4.88	ug/L	1.0	98	70	130			
Bromoform		4.68	ug/L	1.0	94	70	130			
Bromomethane		5.04	ug/L	1.0	101	70	130			
Carbon disulfide		4.60	ug/L	1.0	92	70	130			
Carbon tetrachloride		4.16	ug/L	1.0	83	70	130			
Chlorobenzene		4.92	ug/L	1.0	98	70	130			
Chlorodibromomethane		5.36	ug/L	1.0	107	70	130			
Chloroethane		4.80	ug/L	1.0	96	70	130			
Chloroform		4.48	ug/L	1.0	90	80	120			
Chloromethane		5.28	ug/L	1.0	106	70	130			
1,2-Dibromo-3-chloropropane		4.96	ug/L	1.0	99	70	130			
1,2-Dibromoethane		4.60	ug/L	1.0	92	70	130			
Dibromomethane		5.12	ug/L	1.0	102	70	130			
1,2-Dichlorobenzene		4.88	ug/L	1.0	98	70	130			
1,4-Dichlorobenzene		5.04	ug/L	1.0	101	70	130			
trans-1,4-Dichloro-2-butene		4.68	ug/L	1.0	94	70	130			
Dichlorodifluoromethane		5.16	ug/L	1.0	103	70	130			
1,1-Dichloroethane		4.20	ug/L	1.0	84	70	130			
1,2-Dichloroethane		4.44	ug/L	1.0	89	70	130			
1,1-Dichloroethene		4.16	ug/L	1.0	83	80	120			
cis-1,2-Dichloroethene		4.40	ug/L	1.0	88	70	130			
trans-1,2-Dichloroethene		4.08	ug/L	1.0	82	70	130			
1,2-Dichloropropane		4.68	ug/L	1.0	94	80	120			
cis-1,3-Dichloropropene		5.08	ug/L	1.0	102	70	130			
trans-1,3-Dichloropropene		5.64	ug/L	1.0	113	70	130			
Ethylbenzene		5.16	ug/L	1.0	103	80	120			
2-Hexanone		46.8	ug/L	20	94	70	130			
Iodomethane		4.96	ug/L	1.0	99	70	130			
Methyl ethyl ketone		47.2	ug/L	20	94	70	130			
Methyl isobutyl ketone		44.4	ug/L	20	89	70	130			
Methylene chloride		4.20	ug/L	1.0	84	70	130			
Styrene		4.76	ug/L	1.0	95	70	130			
1,1,1,2-Tetrachloroethane		5.28	ug/L	1.0	106	70	130			
1,1,2,2-Tetrachloroethane		4.92	ug/L	1.0	98	70	130			
Tetrachloroethene		5.44	ug/L	1.0	109	70	130			
Toluene		4.96	ug/L	1.0	99	80	120			
1,1,1-Trichloroethane		4.44	ug/L	1.0	89	70	130			
1,1,2-Trichloroethane		5.52	ug/L	1.0	110	70	130			
Trichloroethene		4.44	ug/L	1.0	89	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Client: Hydrometrics Inc-Helena

Report Date: 07/01/09

Project: 1273 City of Helena

Work Order: H09060177

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B								Analytical Run: 1SATURN_090612A		
Sample ID: CCV061209A	54 Continuing Calibration Verification Standard								06/12/09 09:56	
Trichlorofluoromethane		5.60	ug/L	1.0	112	70	130			
1,2,3-Trichloropropane		4.88	ug/L	1.0	98	70	130			
Vinyl acetate		4.64	ug/L	1.0	93	70	130			
Vinyl chloride		5.04	ug/L	1.0	101	80	120			
m+p-Xylenes		9.92	ug/L	1.0	99	70	130			
o-Xylene		5.44	ug/L	1.0	109	70	130			
Xylenes, Total		15.4	ug/L	1.0	102	70	130			
Surr: 1,2-Dichloroethane-d4				1.0	100	70	130			
Surr: Dibromofluoromethane				1.0	86	70	130			
Surr: p-Bromofluorobenzene				1.0	106	70	130			
Surr: Toluene-d8				1.0	105	70	130			

Method: SW8260B								Batch: R54234		
Sample ID: LCS061208B	54 Laboratory Control Sample							Run: 1SATURN_090612A		
Acetone		44.0	ug/L	20	88	70	130			
Acrylonitrile		47.2	ug/L	20	94	70	130			
Benzene		4.24	ug/L	1.0	85	70	130			
Bromochloromethane		4.44	ug/L	1.0	89	70	130			
Bromodichloromethane		4.80	ug/L	1.0	96	70	130			
Bromoform		4.24	ug/L	1.0	85	70	130			
Bromomethane		4.08	ug/L	1.0	82	70	130			
Carbon disulfide		4.40	ug/L	1.0	88	70	130			
Carbon tetrachloride		4.24	ug/L	1.0	85	70	130			
Chlorobenzene		5.36	ug/L	1.0	107	70	130			
Chlorodibromomethane		5.24	ug/L	1.0	105	70	130			
Chloroethane		4.08	ug/L	1.0	82	70	130			
Chloroform		4.16	ug/L	1.0	83	70	130			
Chloromethane		4.52	ug/L	1.0	90	70	130			
1,2-Dibromo-3-chloropropane		4.64	ug/L	1.0	93	70	130			
1,2-Dibromoethane		4.52	ug/L	1.0	90	70	130			
Dibromomethane		4.56	ug/L	1.0	91	70	130			
1,2-Dichlorobenzene		4.64	ug/L	1.0	93	70	130			
1,4-Dichlorobenzene		4.72	ug/L	1.0	94	70	130			
trans-1,4-Dichloro-2-butene		4.72	ug/L	1.0	94	70	130			
Dichlorodifluoromethane		4.68	ug/L	1.0	94	70	130			
1,1-Dichloroethane		3.92	ug/L	1.0	78	70	130			
1,2-Dichloroethane		3.82	ug/L	1.0	76	70	130			
1,1-Dichloroethene		3.92	ug/L	1.0	78	70	130			
cis-1,2-Dichloroethene		4.04	ug/L	1.0	81	70	130			
trans-1,2-Dichloroethene		4.16	ug/L	1.0	83	70	130			
1,2-Dichloropropane		4.52	ug/L	1.0	90	70	130			
cis-1,3-Dichloropropene		4.84	ug/L	1.0	97	70	130			
trans-1,3-Dichloropropene		5.00	ug/L	1.0	100	70	130			
Ethylbenzene		5.28	ug/L	1.0	106	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Client: Hydrometrics Inc-Helena

Project: 1273 City of Helena

Report Date: 07/01/09

Work Order: H09060177

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Batch: R54234										
Method: SW8260B										
Sample ID: LCS061208B	54	Laboratory Control Sample				Run: 1SATURN_090612A			06/12/09 11:14	
2-Hexanone		44.4	ug/L	20	89	70	130			
Iodomethane		5.00	ug/L	1.0	100	70	130			
Methyl ethyl ketone		43.6	ug/L	20	87	70	130			
Methyl isobutyl ketone		41.6	ug/L	20	83	70	130			
Methylene chloride		3.88	ug/L	1.0	78	70	130			
Styrene		4.72	ug/L	1.0	94	70	130			
1,1,1,2-Tetrachloroethane		5.20	ug/L	1.0	104	70	130			
1,1,2,2-Tetrachloroethane		4.72	ug/L	1.0	94	70	130			
Tetrachloroethene		5.16	ug/L	1.0	103	70	130			
Toluene		4.64	ug/L	1.0	93	70	130			
1,1,1-Trichloroethane		4.36	ug/L	1.0	87	70	130			
1,1,2-Trichloroethane		4.96	ug/L	1.0	99	70	130			
Trichloroethene		4.72	ug/L	1.0	94	70	130			
Trichlorofluoromethane		4.72	ug/L	1.0	94	70	130			
1,2,3-Trichloropropane		4.60	ug/L	1.0	92	70	130			
Vinyl acetate		4.12	ug/L	1.0	82	70	130			
Vinyl chloride		4.32	ug/L	1.0	86	70	130			
m+p-Xylenes		10.2	ug/L	1.0	102	70	130			
o-Xylene		5.36	ug/L	1.0	107	70	130			
Xylenes, Total		15.5	ug/L	1.0	103	70	130			
Surr: 1,2-Dichloroethane-d4				1.0	92	70	130			
Surr: Dibromofluoromethane				1.0	83	70	130			
Surr: p-Bromofluorobenzene				1.0	103	70	130			
Surr: Toluene-d8				1.0	98	70	130			
Sample ID: MBLK061209A	54	Method Blank				Run: 1SATURN_090612A			06/12/09 12:57	
Acetone		ND	ug/L	20						
Acrylonitrile		ND	ug/L	20						
Benzene		ND	ug/L	1.0						
Bromochloromethane		ND	ug/L	1.0						
Bromodichloromethane		ND	ug/L	1.0						
Bromoform		ND	ug/L	1.0						
Bromomethane		ND	ug/L	1.0						
Carbon disulfide		ND	ug/L	1.0						
Carbon tetrachloride		ND	ug/L	1.0						
Chlorobenzene		ND	ug/L	1.0						
Chlorodibromomethane		ND	ug/L	1.0						
Chloroethane		ND	ug/L	1.0						
Chloroform		ND	ug/L	1.0						
Chloromethane		ND	ug/L	1.0						
1,2-Dibromo-3-chloropropane		ND	ug/L	1.0						
1,2-Dibromoethane		ND	ug/L	1.0						
Dibromomethane		ND	ug/L	1.0						
1,2-Dichlorobenzene		ND	ug/L	1.0						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Client: Hydrometrics Inc-Helena

Report Date: 07/01/09

Project: 1273 City of Helena

Work Order: H09060177

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R54234
Sample ID: MBLK061209A	54	Method Blank		Run: 1SATURN_090612A				06/12/09 12:57		
1,4-Dichlorobenzene		ND	ug/L	1.0						
trans-1,4-Dichloro-2-butene		ND	ug/L	1.0						
Dichlorodifluoromethane		ND	ug/L	1.0						
1,1-Dichloroethane		ND	ug/L	1.0						
1,2-Dichloroethane		ND	ug/L	1.0						
1,1-Dichloroethene		ND	ug/L	1.0						
cis-1,2-Dichloroethene		ND	ug/L	1.0						
trans-1,2-Dichloroethene		ND	ug/L	1.0						
1,2-Dichloropropane		ND	ug/L	1.0						
cis-1,3-Dichloropropene		ND	ug/L	1.0						
trans-1,3-Dichloropropene		ND	ug/L	1.0						
Ethylbenzene		ND	ug/L	1.0						
2-Hexanone		ND	ug/L	20						
Iodomethane		ND	ug/L	1.0						
Methyl ethyl ketone		ND	ug/L	20						
Methyl isobutyl ketone		ND	ug/L	20						
Methylene chloride		ND	ug/L	1.0						
Styrene		ND	ug/L	1.0						
1,1,1,2-Tetrachloroethane		ND	ug/L	1.0						
1,1,2,2-Tetrachloroethane		ND	ug/L	1.0						
Tetrachloroethene		ND	ug/L	1.0						
Toluene		ND	ug/L	1.0						
1,1,1-Trichloroethane		ND	ug/L	1.0						
1,1,2-Trichloroethane		ND	ug/L	1.0						
Trichloroethene		ND	ug/L	1.0						
Trichlorofluoromethane		ND	ug/L	1.0						
1,2,3-Trichloropropane		ND	ug/L	1.0						
Vinyl acetate		ND	ug/L	1.0						
Vinyl chloride		ND	ug/L	1.0						
m+p-Xylenes		ND	ug/L	1.0						
o-Xylene		ND	ug/L	1.0						
Xylenes, Total		ND	ug/L	1.0						
Surr: 1,2-Dichloroethane-d4				1.0	94	70	130			
Surr: Dibromofluoromethane				1.0	86	70	130			
Surr: p-Bromofluorobenzene				1.0	104	70	130			
Surr: Toluene-d8				1.0	95	70	130			
Sample ID: H09060048-001EMS	54	Sample Matrix Spike		Run: 1SATURN_090612A				06/13/09 17:16		
Acetone		88.0	ug/L	40	88	70	130			
Acrylonitrile		95.2	ug/L	40	95	70	130			
Benzene		8.24	ug/L	2.0	82	70	130			
Bromochloromethane		8.72	ug/L	2.0	87	70	130			
Bromodichloromethane		9.28	ug/L	2.0	93	70	130			
Bromoform		8.80	ug/L	2.0	88	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Client: Hydrometrics Inc-Helena

Project: 1273 City of Helena

Report Date: 07/01/09

Work Order: H09060177

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Batch: R54234										
Method: SW8260B										
Sample ID: H09060048-001EMS	54	Sample Matrix Spike		Run: 1SATURN_090612A				06/13/09 17:16		
Bromomethane		9.76	ug/L	2.0	98	70	130			
Carbon disulfide		8.96	ug/L	2.0	90	70	130			
Carbon tetrachloride		8.08	ug/L	2.0	81	70	130			
Chlorobenzene		10.0	ug/L	2.0	100	70	130			
Chlorodibromomethane		9.68	ug/L	2.0	97	70	130			
Chloroethane		9.36	ug/L	2.0	94	70	130			
Chloroform		7.87	ug/L	2.0	79	70	130			
Chloromethane		10.7	ug/L	2.0	107	70	130			
1,2-Dibromo-3-chloropropane		9.04	ug/L	2.0	90	70	130			
1,2-Dibromoethane		8.64	ug/L	2.0	86	70	130			
Dibromomethane		10.1	ug/L	2.0	101	70	130			
1,2-Dichlorobenzene		9.68	ug/L	2.0	97	70	130			
1,4-Dichlorobenzene		10.5	ug/L	2.0	105	70	130			
trans-1,4-Dichloro-2-butene		9.12	ug/L	2.0	91	70	130			
Dichlorodifluoromethane		11.4	ug/L	2.0	114	70	130			
1,1-Dichloroethane		8.32	ug/L	2.0	83	70	130			
1,2-Dichloroethane		8.24	ug/L	2.0	82	70	130			
1,1-Dichloroethene		8.16	ug/L	2.0	82	70	130			
cis-1,2-Dichloroethene		8.88	ug/L	2.0	89	70	130			
trans-1,2-Dichloroethene		8.24	ug/L	2.0	82	70	130			
1,2-Dichloropropane		8.88	ug/L	2.0	89	70	130			
cis-1,3-Dichloropropene		10.2	ug/L	2.0	102	70	130			
trans-1,3-Dichloropropene		9.84	ug/L	2.0	98	70	130			
Ethylbenzene		11.0	ug/L	2.0	110	70	130			
2-Hexanone		91.2	ug/L	40	91	70	130			
Iodomethane		9.44	ug/L	2.0	94	70	130			
Methyl ethyl ketone		90.4	ug/L	40	90	70	130			
Methyl isobutyl ketone		90.4	ug/L	40	90	70	130			
Methylene chloride		7.47	ug/L	2.0	75	70	130			
Styrene		9.68	ug/L	2.0	97	70	130			
1,1,1,2-Tetrachloroethane		10.6	ug/L	2.0	106	70	130			
1,1,2,2-Tetrachloroethane		10.1	ug/L	2.0	101	70	130			
Tetrachloroethene		10.9	ug/L	2.0	109	70	130			
Toluene		10.1	ug/L	2.0	101	70	130			
1,1,1-Trichloroethane		8.48	ug/L	2.0	85	70	130			
1,1,2-Trichloroethane		10.6	ug/L	2.0	106	70	130			
Trichloroethene		9.76	ug/L	2.0	98	70	130			
Trichlorofluoromethane		10.9	ug/L	2.0	109	70	130			
1,2,3-Trichloropropane		9.92	ug/L	2.0	99	70	130			
Vinyl acetate		8.00	ug/L	2.0	80	70	130			
Vinyl chloride		10.1	ug/L	2.0	101	70	130			
m+p-Xylenes		19.8	ug/L	2.0	99	70	130			
o-Xylene		10.6	ug/L	2.0	106	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Client: Hydrometrics Inc-Helena

Report Date: 07/01/09

Project: 1273 City of Helena

Work Order: H09060177

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R54234
Sample ID: H09060048-001EMS 54 Sample Matrix Spike										Run: 1SATURN_090612A 06/13/09 17:16
Xylenes, Total		30.4	ug/L	2.0	101	70	130			
Surr: 1,2-Dichloroethane-d4				2.0	98	70	130			
Surr: Dibromofluoromethane				2.0	90	70	130			
Surr: p-Bromofluorobenzene				2.0	109	70	130			
Surr: Toluene-d8				2.0	117	70	130			
Sample ID: H09060048-001EMSD 54 Sample Matrix Spike Duplicate										Run: 1SATURN_090612A 06/13/09 17:46
Acetone		88.0	ug/L	40	88	70	130	0	20	
Acrylonitrile		92.8	ug/L	40	93	70	130	2.6	20	
Benzene		8.64	ug/L	2.0	86	70	130	4.7	20	
Bromochloromethane		9.44	ug/L	2.0	94	70	130	7.9	20	
Bromodichloromethane		10.5	ug/L	2.0	105	70	130	12	20	
Bromoform		10.2	ug/L	2.0	102	70	130	14	20	
Bromomethane		8.88	ug/L	2.0	89	70	130	9.4	20	
Carbon disulfide		9.20	ug/L	2.0	92	70	130	2.6	20	
Carbon tetrachloride		8.64	ug/L	2.0	86	70	130	6.7	20	
Chlorobenzene		11.3	ug/L	2.0	113	70	130	12	20	
Chlorodibromomethane		11.0	ug/L	2.0	110	70	130	13	20	
Chloroethane		9.52	ug/L	2.0	95	70	130	1.7	20	
Chloroform		8.80	ug/L	2.0	88	70	130	11	20	
Chloromethane		10.6	ug/L	2.0	106	70	130	0.7	20	
1,2-Dibromo-3-chloropropane		10.1	ug/L	2.0	101	70	130	11	20	
1,2-Dibromoethane		9.52	ug/L	2.0	95	70	130	9.7	20	
Dibromomethane		10.6	ug/L	2.0	106	70	130	4.7	20	
1,2-Dichlorobenzene		10.9	ug/L	2.0	109	70	130	12	20	
1,4-Dichlorobenzene		10.6	ug/L	2.0	106	70	130	0.8	20	
trans-1,4-Dichloro-2-butene		10.2	ug/L	2.0	102	70	130	12	20	
Dichlorodifluoromethane		11.8	ug/L	2.0	118	70	130	2.8	20	
1,1-Dichloroethane		8.40	ug/L	2.0	84	70	130	1	20	
1,2-Dichloroethane		8.80	ug/L	2.0	88	70	130	6.6	20	
1,1-Dichloroethene		8.56	ug/L	2.0	86	70	130	4.8	20	
cis-1,2-Dichloroethene		8.96	ug/L	2.0	90	70	130	0.9	20	
trans-1,2-Dichloroethene		8.88	ug/L	2.0	89	70	130	7.5	20	
1,2-Dichloropropane		9.92	ug/L	2.0	99	70	130	11	20	
cis-1,3-Dichloropropene		10.8	ug/L	2.0	108	70	130	5.3	20	
trans-1,3-Dichloropropene		11.0	ug/L	2.0	110	70	130	11	20	
Ethylbenzene		11.7	ug/L	2.0	117	70	130	5.6	20	
2-Hexanone		91.2	ug/L	40	91	70	130	0	20	
Iodomethane		10.2	ug/L	2.0	102	70	130	8.1	20	
Methyl ethyl ketone		86.4	ug/L	40	86	70	130	4.5	20	
Methyl isobutyl ketone		96.8	ug/L	40	97	70	130	6.8	20	
Methylene chloride		8.08	ug/L	2.0	81	70	130	7.8	20	
Styrene		9.76	ug/L	2.0	98	70	130	0.8	20	
1,1,1,2-Tetrachloroethane		10.9	ug/L	2.0	109	70	130	3	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Client: Hydrometrics Inc-Helena

Project: 1273 City of Helena

Report Date: 07/01/09

Work Order: H09060177

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R54234
Sample ID: H09060048-001EMSD 54 Sample Matrix Spike Duplicate										Run: 1SATURN_090612A 06/13/09 17:46
1,1,2,2-Tetrachloroethane		10.7	ug/L	2.0	107	70	130	6.2	20	
Tetrachloroethene		11.0	ug/L	2.0	110	70	130	1.5	20	
Toluene		10.8	ug/L	2.0	108	70	130	6.9	20	
1,1,1-Trichloroethane		8.96	ug/L	2.0	90	70	130	5.5	20	
1,1,2-Trichloroethane		11.0	ug/L	2.0	110	70	130	3	20	
Trichloroethene		10.1	ug/L	2.0	101	70	130	3.2	20	
Trichlorofluoromethane		10.7	ug/L	2.0	107	70	130	1.5	20	
1,2,3-Trichloropropane		9.28	ug/L	2.0	93	70	130	6.7	20	
Vinyl acetate		8.72	ug/L	2.0	87	70	130	8.6	20	
Vinyl chloride		10.0	ug/L	2.0	100	70	130	0.8	20	
m+p-Xylenes		23.3	ug/L	2.0	116	70	130	16	20	
o-Xylene		11.1	ug/L	2.0	111	70	130	5.2	20	
Xylenes, Total		34.4	ug/L	2.0	115	70	130	12	20	
Surr: 1,2-Dichloroethane-d4				2.0	98	70	130	0	20	
Surr: Dibromofluoromethane				2.0	87	70	130	0	20	
Surr: p-Bromofluorobenzene				2.0	115	70	130	0	20	
Surr: Toluene-d8				2.0	118	70	130	0	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Client: Hydrometrics Inc-Helena

Report Date: 07/01/09

Project: 1273 City of Helena

Work Order: H09060177

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B								Analytical Run: 1SATURN_090613A		
Sample ID: CCV061309A	54 Continuing Calibration Verification Standard								06/13/09 12:39	
Acetone		50.4	ug/L	20	101	70	130			
Acrylonitrile		50.8	ug/L	20	102	70	130			
Benzene		4.60	ug/L	1.0	92	70	130			
Bromochloromethane		5.00	ug/L	1.0	100	70	130			
Bromodichloromethane		5.40	ug/L	1.0	108	70	130			
Bromoform		4.76	ug/L	1.0	95	70	130			
Bromomethane		4.56	ug/L	1.0	91	70	130			
Carbon disulfide		4.76	ug/L	1.0	95	70	130			
Carbon tetrachloride		4.72	ug/L	1.0	94	70	130			
Chlorobenzene		5.12	ug/L	1.0	102	70	130			
Chlorodibromomethane		5.36	ug/L	1.0	107	70	130			
Chloroethane		4.56	ug/L	1.0	91	70	130			
Chloroform		4.52	ug/L	1.0	90	80	120			
Chloromethane		5.20	ug/L	1.0	104	70	130			
1,2-Dibromo-3-chloropropane		4.44	ug/L	1.0	89	70	130			
1,2-Dibromoethane		4.92	ug/L	1.0	98	70	130			
Dibromomethane		5.16	ug/L	1.0	103	70	130			
1,2-Dichlorobenzene		4.80	ug/L	1.0	96	70	130			
1,4-Dichlorobenzene		4.88	ug/L	1.0	98	70	130			
trans-1,4-Dichloro-2-butene		4.72	ug/L	1.0	94	70	130			
Dichlorodifluoromethane		5.24	ug/L	1.0	105	70	130			
1,1-Dichloroethane		4.60	ug/L	1.0	92	70	130			
1,2-Dichloroethane		4.36	ug/L	1.0	87	70	130			
1,1-Dichloroethene		4.40	ug/L	1.0	88	80	120			
cis-1,2-Dichloroethene		4.72	ug/L	1.0	94	70	130			
trans-1,2-Dichloroethene		4.72	ug/L	1.0	94	70	130			
1,2-Dichloropropane		4.88	ug/L	1.0	98	80	120			
cis-1,3-Dichloropropene		5.24	ug/L	1.0	105	70	130			
trans-1,3-Dichloropropene		5.52	ug/L	1.0	110	70	130			
Ethylbenzene		5.60	ug/L	1.0	112	80	120			
2-Hexanone		49.6	ug/L	20	99	70	130			
Iodomethane		4.96	ug/L	1.0	99	70	130			
Methyl ethyl ketone		48.8	ug/L	20	98	70	130			
Methyl isobutyl ketone		48.8	ug/L	20	98	70	130			
Methylene chloride		4.36	ug/L	1.0	87	70	130			
Styrene		5.12	ug/L	1.0	102	70	130			
1,1,1,2-Tetrachloroethane		5.40	ug/L	1.0	108	70	130			
1,1,2,2-Tetrachloroethane		4.76	ug/L	1.0	95	70	130			
Tetrachloroethene		5.84	ug/L	1.0	117	70	130			
Toluene		5.32	ug/L	1.0	106	80	120			
1,1,1-Trichloroethane		4.96	ug/L	1.0	99	70	130			
1,1,2-Trichloroethane		5.48	ug/L	1.0	110	70	130			
Trichloroethene		5.08	ug/L	1.0	102	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Client: Hydrometrics Inc-Helena

Report Date: 07/01/09

Project: 1273 City of Helena

Work Order: H09060177

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B								Analytical Run: 1SATURN_090613A		
Sample ID: CCV061309A	54	Continuing Calibration Verification Standard							06/13/09 12:39	
Trichlorofluoromethane		5.48	ug/L	1.0	110	70	130			
1,2,3-Trichloropropane		4.76	ug/L	1.0	95	70	130			
Vinyl acetate		4.72	ug/L	1.0	94	70	130			
Vinyl chloride		5.00	ug/L	1.0	100	80	120			
m+p-Xylenes		11.2	ug/L	1.0	112	70	130			
o-Xylene		5.76	ug/L	1.0	115	70	130			
Xylenes, Total		16.9	ug/L	1.0	113	70	130			
Surr: 1,2-Dichloroethane-d4				1.0	96	70	130			
Surr: Dibromofluoromethane				1.0	87	70	130			
Surr: p-Bromofluorobenzene				1.0	100	70	130			
Surr: Toluene-d8				1.0	110	70	130			
Method: SW8260B								Batch: R54235		
Sample ID: LCS061309A	54	Laboratory Control Sample							Run: 1SATURN_090613A	
Acetone		47.6	ug/L	20	95	70	130		06/13/09 13:17	
Acrylonitrile		46.4	ug/L	20	93	70	130			
Benzene		4.24	ug/L	1.0	85	70	130			
Bromochloromethane		4.80	ug/L	1.0	96	70	130			
Bromodichloromethane		4.76	ug/L	1.0	95	70	130			
Bromoform		4.52	ug/L	1.0	90	70	130			
Bromomethane		4.20	ug/L	1.0	84	70	130			
Carbon disulfide		4.88	ug/L	1.0	98	70	130			
Carbon tetrachloride		4.28	ug/L	1.0	86	70	130			
Chlorobenzene		5.24	ug/L	1.0	105	70	130			
Chlorodibromomethane		4.88	ug/L	1.0	98	70	130			
Chloroethane		4.20	ug/L	1.0	84	70	130			
Chloroform		4.32	ug/L	1.0	86	70	130			
Chloromethane		5.20	ug/L	1.0	104	70	130			
1,2-Dibromo-3-chloropropane		4.52	ug/L	1.0	90	70	130			
1,2-Dibromoethane		4.52	ug/L	1.0	90	70	130			
Dibromomethane		4.56	ug/L	1.0	91	70	130			
1,2-Dichlorobenzene		4.88	ug/L	1.0	98	70	130			
1,4-Dichlorobenzene		4.96	ug/L	1.0	99	70	130			
trans-1,4-Dichloro-2-butene		4.72	ug/L	1.0	94	70	130			
Dichlorodifluoromethane		5.32	ug/L	1.0	106	70	130			
1,1-Dichloroethane		4.32	ug/L	1.0	86	70	130			
1,2-Dichloroethane		4.40	ug/L	1.0	88	70	130			
1,1-Dichloroethene		4.28	ug/L	1.0	86	70	130			
cis-1,2-Dichloroethene		4.40	ug/L	1.0	88	70	130			
trans-1,2-Dichloroethene		4.40	ug/L	1.0	88	70	130			
1,2-Dichloropropane		4.52	ug/L	1.0	90	70	130			
cis-1,3-Dichloropropene		5.12	ug/L	1.0	102	70	130			
trans-1,3-Dichloropropene		5.48	ug/L	1.0	110	70	130			
Ethylbenzene		5.48	ug/L	1.0	110	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



ENERGY LABORATORIES, INC. * 3161 E Lyndale (59604) * PO Box 5688 * Helena, MT 59601
Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@energylab.com

QA/QC Summary Report

Client: Hydrometrics Inc-Helena

Report Date: 07/01/09

Project: 1273 City of Helena

Work Order: H09060177

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R54235
Sample ID: LCS061309A	54	Laboratory Control Sample				Run: 1SATURN_090613A				06/13/09 13:17
2-Hexanone		47.2	ug/L	20	94	70	130			
Iodomethane		5.12	ug/L	1.0	102	70	130			
Methyl ethyl ketone		47.6	ug/L	20	95	70	130			
Methyl isobutyl ketone		47.6	ug/L	20	95	70	130			
Methylene chloride		4.24	ug/L	1.0	85	70	130			
Styrene		4.64	ug/L	1.0	93	70	130			
1,1,1,2-Tetrachloroethane		5.08	ug/L	1.0	102	70	130			
1,1,2,2-Tetrachloroethane		4.60	ug/L	1.0	92	70	130			
Tetrachloroethene		5.56	ug/L	1.0	111	70	130			
Toluene		4.92	ug/L	1.0	98	70	130			
1,1,1-Trichloroethane		4.60	ug/L	1.0	92	70	130			
1,1,2-Trichloroethane		5.24	ug/L	1.0	105	70	130			
Trichloroethene		4.68	ug/L	1.0	94	70	130			
Trichlorofluoromethane		5.16	ug/L	1.0	103	70	130			
1,2,3-Trichloropropane		4.60	ug/L	1.0	92	70	130			
Vinyl acetate		4.48	ug/L	1.0	90	70	130			
Vinyl chloride		4.96	ug/L	1.0	99	70	130			
m+p-Xylenes		10.4	ug/L	1.0	104	70	130			
o-Xylene		5.36	ug/L	1.0	107	70	130			
Xylenes, Total		15.8	ug/L	1.0	105	70	130			
Surr: 1,2-Dichloroethane-d4				1.0	91	70	130			
Surr: Dibromofluoromethane				1.0	77	70	130			
Surr: p-Bromofluorobenzene				1.0	98	70	130			
Surr: Toluene-d8				1.0	103	70	130			
Sample ID: MBLK061309B	54	Method Blank				Run: 1SATURN_090613A				06/13/09 15:19
Acetone		ND	ug/L	20						
Acrylonitrile		ND	ug/L	20						
Benzene		ND	ug/L	1.0						
Bromochloromethane		ND	ug/L	1.0						
Bromodichloromethane		ND	ug/L	1.0						
Bromoform		ND	ug/L	1.0						
Bromomethane		ND	ug/L	1.0						
Carbon disulfide		ND	ug/L	1.0						
Carbon tetrachloride		ND	ug/L	1.0						
Chlorobenzene		ND	ug/L	1.0						
Chlorodibromomethane		ND	ug/L	1.0						
Chloroethane		ND	ug/L	1.0						
Chloroform		ND	ug/L	1.0						
Chloromethane		ND	ug/L	1.0						
1,2-Dibromo-3-chloropropane		ND	ug/L	1.0						
1,2-Dibromoethane		ND	ug/L	1.0						
Dibromomethane		ND	ug/L	1.0						
1,2-Dichlorobenzene		ND	ug/L	1.0						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



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QA/QC Summary Report

Client: Hydrometrics Inc-Helena

Project: 1273 City of Helena

Report Date: 07/01/09

Work Order: H09060177

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R54235
Sample ID: MBLK061309B	54	Method Blank			Run: 1SATURN_090613A				06/13/09 15:19	
1,4-Dichlorobenzene		ND	ug/L		1.0					
trans-1,4-Dichloro-2-butene		ND	ug/L		1.0					
Dichlorodifluoromethane		ND	ug/L		1.0					
1,1-Dichloroethane		ND	ug/L		1.0					
1,2-Dichloroethane		ND	ug/L		1.0					
1,1-Dichloroethene		ND	ug/L		1.0					
cis-1,2-Dichloroethene		ND	ug/L		1.0					
trans-1,2-Dichloroethene		ND	ug/L		1.0					
1,2-Dichloropropane		ND	ug/L		1.0					
cis-1,3-Dichloropropene		ND	ug/L		1.0					
trans-1,3-Dichloropropene		ND	ug/L		1.0					
Ethylbenzene		ND	ug/L		1.0					
2-Hexanone		ND	ug/L		20					
Iodomethane		ND	ug/L		1.0					
Methyl ethyl ketone		ND	ug/L		20					
Methyl isobutyl ketone		ND	ug/L		20					
Methylene chloride		ND	ug/L		1.0					
Styrene		ND	ug/L		1.0					
1,1,1,2-Tetrachloroethane		ND	ug/L		1.0					
1,1,2,2-Tetrachloroethane		ND	ug/L		1.0					
Tetrachloroethene		ND	ug/L		1.0					
Toluene		ND	ug/L		1.0					
1,1,1-Trichloroethane		ND	ug/L		1.0					
1,1,2-Trichloroethane		ND	ug/L		1.0					
Trichloroethene		ND	ug/L		1.0					
Trichlorofluoromethane		ND	ug/L		1.0					
1,2,3-Trichloropropane		ND	ug/L		1.0					
Vinyl acetate		ND	ug/L		1.0					
Vinyl chloride		ND	ug/L		1.0					
m+p-Xylenes		ND	ug/L		1.0					
o-Xylene		ND	ug/L		1.0					
Xylenes, Total		ND	ug/L		1.0					
Surr: 1,2-Dichloroethane-d4				1.0	92	70	130			
Surr: Dibromofluoromethane				1.0	83	70	130			
Surr: p-Bromofluorobenzene				1.0	110	70	130			
Surr: Toluene-d8				1.0	107	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Client: Hydrometrics Inc-Helena

Report Date: 07/01/09

Project: 1273 City of Helena

Work Order: H09060177

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B		Analytical Run: 1SATURN_090615A								
Sample ID: CCV061509A	54 Continuing Calibration Verification Standard									06/15/09 12:43
Acetone		44.0	ug/L	20	88	70	130			
Acrylonitrile		47.2	ug/L	20	94	70	130			
Benzene		4.48	ug/L	1.0	90	70	130			
Bromochloromethane		4.96	ug/L	1.0	99	70	130			
Bromodichloromethane		5.00	ug/L	1.0	100	70	130			
Bromoform		4.96	ug/L	1.0	99	70	130			
Bromomethane		4.52	ug/L	1.0	90	70	130			
Carbon disulfide		4.56	ug/L	1.0	91	70	130			
Carbon tetrachloride		4.60	ug/L	1.0	92	70	130			
Chlorobenzene		5.32	ug/L	1.0	106	70	130			
Chlorodibromomethane		4.88	ug/L	1.0	98	70	130			
Chloroethane		4.32	ug/L	1.0	86	70	130			
Chloroform		4.56	ug/L	1.0	91	80	120			
Chloromethane		4.52	ug/L	1.0	90	70	130			
1,2-Dibromo-3-chloropropane		4.80	ug/L	1.0	96	70	130			
1,2-Dibromoethane		4.48	ug/L	1.0	90	70	130			
Dibromomethane		5.00	ug/L	1.0	100	70	130			
1,2-Dichlorobenzene		5.20	ug/L	1.0	104	70	130			
1,4-Dichlorobenzene		5.48	ug/L	1.0	110	70	130			
trans-1,4-Dichloro-2-butene		5.40	ug/L	1.0	108	70	130			
Dichlorodifluoromethane		4.64	ug/L	1.0	93	70	130			
1,1-Dichloroethane		4.48	ug/L	1.0	90	70	130			
1,2-Dichloroethane		4.16	ug/L	1.0	83	70	130			
1,1-Dichloroethene		4.24	ug/L	1.0	85	80	120			
cis-1,2-Dichloroethene		4.76	ug/L	1.0	95	70	130			
trans-1,2-Dichloroethene		4.48	ug/L	1.0	90	70	130			
1,2-Dichloropropane		4.80	ug/L	1.0	96	80	120			
cis-1,3-Dichloropropene		5.28	ug/L	1.0	106	70	130			
trans-1,3-Dichloropropene		5.28	ug/L	1.0	106	70	130			
Ethylbenzene		5.32	ug/L	1.0	106	80	120			
2-Hexanone		48.0	ug/L	20	96	70	130			
Iodomethane		4.84	ug/L	1.0	97	70	130			
Methyl ethyl ketone		46.0	ug/L	20	92	70	130			
Methyl isobutyl ketone		46.4	ug/L	20	93	70	130			
Methylene chloride		4.20	ug/L	1.0	84	70	130			
Styrene		4.92	ug/L	1.0	98	70	130			
1,1,1,2-Tetrachloroethane		4.72	ug/L	1.0	94	70	130			
1,1,2,2-Tetrachloroethane		5.16	ug/L	1.0	103	70	130			
Tetrachloroethene		5.44	ug/L	1.0	109	70	130			
Toluene		4.88	ug/L	1.0	98	80	120			
1,1,1-Trichloroethane		4.72	ug/L	1.0	94	70	130			
1,1,2-Trichloroethane		5.28	ug/L	1.0	106	70	130			
Trichloroethene		4.76	ug/L	1.0	95	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Client: Hydrometrics Inc-Helena

Report Date: 07/01/09

Project: 1273 City of Helena

Work Order: H09060177

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B								Analytical Run: 1SATURN_090615A		
Sample ID: CCV061509A	54 Continuing Calibration Verification Standard								06/15/09 12:43	
Trichlorofluoromethane		5.00	ug/L	1.0	100	70	130			
1,2,3-Trichloropropane		4.84	ug/L	1.0	97	70	130			
Vinyl acetate		4.52	ug/L	1.0	90	70	130			
Vinyl chloride		4.40	ug/L	1.0	88	80	120			
m+p-Xylenes		9.88	ug/L	1.0	99	70	130			
o-Xylene		5.20	ug/L	1.0	104	70	130			
Xylenes, Total		15.1	ug/L	1.0	101	70	130			
Surr: 1,2-Dichloroethane-d4				1.0	94	70	130			
Surr: Dibromofluoromethane				1.0	85	70	130			
Surr: p-Bromofluorobenzene				1.0	112	70	130			
Surr: Toluene-d8				1.0	106	70	130			
Method: SW8260B								Batch: R54267		
Sample ID: LCS061509A	54 Laboratory Control Sample							Run: 1SATURN_090615A		06/15/09 13:45
Acetone		47.6	ug/L	20	95	70	130			
Acrylonitrile		52.0	ug/L	20	104	70	130			
Benzene		5.04	ug/L	1.0	101	70	130			
Bromochloromethane		5.52	ug/L	1.0	110	70	130			
Bromodichloromethane		5.56	ug/L	1.0	111	70	130			
Bromoform		5.00	ug/L	1.0	100	70	130			
Bromomethane		4.48	ug/L	1.0	90	70	130			
Carbon disulfide		5.44	ug/L	1.0	109	70	130			
Carbon tetrachloride		5.32	ug/L	1.0	106	70	130			
Chlorobenzene		5.76	ug/L	1.0	115	70	130			
Chlorodibromomethane		5.88	ug/L	1.0	118	70	130			
Chloroethane		4.48	ug/L	1.0	90	70	130			
Chloroform		5.08	ug/L	1.0	102	70	130			
Chloromethane		4.20	ug/L	1.0	84	70	130			
1,2-Dibromo-3-chloropropane		4.68	ug/L	1.0	94	70	130			
1,2-Dibromoethane		5.44	ug/L	1.0	109	70	130			
Dibromomethane		5.56	ug/L	1.0	111	70	130			
1,2-Dichlorobenzene		5.44	ug/L	1.0	109	70	130			
1,4-Dichlorobenzene		5.60	ug/L	1.0	112	70	130			
trans-1,4-Dichloro-2-butene		5.60	ug/L	1.0	112	70	130			
Dichlorodifluoromethane		3.48	ug/L	1.0	70	70	130			
1,1-Dichloroethane		5.12	ug/L	1.0	102	70	130			
1,2-Dichloroethane		4.80	ug/L	1.0	96	70	130			
1,1-Dichloroethene		5.12	ug/L	1.0	102	70	130			
cis-1,2-Dichloroethene		5.16	ug/L	1.0	103	70	130			
trans-1,2-Dichloroethene		5.44	ug/L	1.0	109	70	130			
1,2-Dichloropropane		5.32	ug/L	1.0	106	70	130			
cis-1,3-Dichloropropene		5.88	ug/L	1.0	118	70	130			
trans-1,3-Dichloropropene		6.16	ug/L	1.0	123	70	130			
Ethylbenzene		6.04	ug/L	1.0	121	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Client: Hydrometrics Inc-Helena

Report Date: 07/01/09

Project: 1273 City of Helena

Work Order: H09060177

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R54267
Sample ID: LCS061509A	54	Laboratory Control Sample				Run: 1SATURN_090615A			06/15/09 13:45	
2-Hexanone		52.4	ug/L	20	105	70	130			
Iodomethane		5.72	ug/L	1.0	114	70	130			
Methyl ethyl ketone		48.8	ug/L	20	98	70	130			
Methyl isobutyl ketone		48.8	ug/L	20	98	70	130			
Methylene chloride		5.08	ug/L	1.0	102	70	130			
Styrene		5.60	ug/L	1.0	112	70	130			
1,1,1,2-Tetrachloroethane		5.56	ug/L	1.0	111	70	130			
1,1,2,2-Tetrachloroethane		5.12	ug/L	1.0	102	70	130			
Tetrachloroethane		6.28	ug/L	1.0	126	70	130			
Toluene		5.64	ug/L	1.0	113	70	130			
1,1,1-Trichloroethane		5.36	ug/L	1.0	107	70	130			
1,1,2-Trichloroethane		5.68	ug/L	1.0	114	70	130			
Trichloroethene		5.84	ug/L	1.0	117	70	130			
Trichlorofluoromethane		4.92	ug/L	1.0	98	70	130			
1,2,3-Trichloropropane		4.76	ug/L	1.0	95	70	130			
Vinyl acetate		4.64	ug/L	1.0	93	70	130			
Vinyl chloride		4.60	ug/L	1.0	92	70	130			
m+p-Xylenes		11.8	ug/L	1.0	118	70	130			
o-Xylene		6.12	ug/L	1.0	122	70	130			
Xylenes, Total		17.9	ug/L	1.0	119	70	130			
Surr: 1,2-Dichloroethane-d4				1.0	98	70	130			
Surr: Dibromofluoromethane				1.0	91	70	130			
Surr: p-Bromofluorobenzene				1.0	108	70	130			
Surr: Toluene-d8				1.0	113	70	130			
Sample ID: MB061509A	54	Method Blank				Run: 1SATURN_090615A			06/15/09 14:48	
Acetone		ND	ug/L	20						
Acrylonitrile		ND	ug/L	20						
Benzene		ND	ug/L	1.0						
Bromochloromethane		ND	ug/L	1.0						
Bromodichloromethane		ND	ug/L	1.0						
Bromoform		ND	ug/L	1.0						
Bromomethane		ND	ug/L	1.0						
Carbon disulfide		ND	ug/L	1.0						
Carbon tetrachloride		ND	ug/L	1.0						
Chlorobenzene		ND	ug/L	1.0						
Chlorodibromomethane		ND	ug/L	1.0						
Chloroethane		ND	ug/L	1.0						
Chloroform		ND	ug/L	1.0						
Chloromethane		ND	ug/L	1.0						
1,2-Dibromo-3-chloropropane		ND	ug/L	1.0						
1,2-Dibromoethane		ND	ug/L	1.0						
Dibromomethane		ND	ug/L	1.0						
1,2-Dichlorobenzene		ND	ug/L	1.0						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Client: Hydrometrics Inc-Helena

Report Date: 07/01/09

Project: 1273 City of Helena

Work Order: H09060177

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R54267
Sample ID: MB061509A	54	Method Blank				Run: 1SATURN_090615A				06/15/09 14:48
1,4-Dichlorobenzene		ND	ug/L	1.0						
trans-1,4-Dichloro-2-butene		ND	ug/L	1.0						
Dichlorodifluoromethane		ND	ug/L	1.0						
1,1-Dichloroethane		ND	ug/L	1.0						
1,2-Dichloroethane		ND	ug/L	1.0						
1,1-Dichloroethene		ND	ug/L	1.0						
cis-1,2-Dichloroethene		ND	ug/L	1.0						
trans-1,2-Dichloroethene		ND	ug/L	1.0						
1,2-Dichloropropane		ND	ug/L	1.0						
cis-1,3-Dichloropropene		ND	ug/L	1.0						
trans-1,3-Dichloropropene		ND	ug/L	1.0						
Ethylbenzene		ND	ug/L	1.0						
2-Hexanone		ND	ug/L	20						
Iodomethane		ND	ug/L	1.0						
Methyl ethyl ketone		ND	ug/L	20						
Methyl isobutyl ketone		ND	ug/L	20						
Methylene chloride		ND	ug/L	1.0						
Styrene		ND	ug/L	1.0						
1,1,1,2-Tetrachloroethane		ND	ug/L	1.0						
1,1,2,2-Tetrachloroethane		ND	ug/L	1.0						
Tetrachloroethene		ND	ug/L	1.0						
Toluene		ND	ug/L	1.0						
1,1,1-Trichloroethane		ND	ug/L	1.0						
1,1,2-Trichloroethane		ND	ug/L	1.0						
Trichloroethene		ND	ug/L	1.0						
Trichlorofluoromethane		ND	ug/L	1.0						
1,2,3-Trichloropropane		ND	ug/L	1.0						
Vinyl acetate		ND	ug/L	1.0						
Vinyl chloride		ND	ug/L	1.0						
m+p-Xylenes		ND	ug/L	1.0						
o-Xylene		ND	ug/L	1.0						
Xylenes, Total		ND	ug/L	1.0						
Surr: 1,2-Dichloroethane-d4				1.0	99	70	130			
Surr: Dibromofluoromethane				1.0	89	70	130			
Surr: p-Bromofluorobenzene				1.0	110	70	130			
Surr: Toluene-d8				1.0	109	70	130			
Sample ID: H09060177-013AMS	54	Sample Matrix Spike				Run: 1SATURN_090615A				06/15/09 20:57
Acetone		94.4	ug/L	40	94	70	130			
Acrylonitrile		96.8	ug/L	40	97	70	130			
Benzene		8.16	ug/L	2.0	82	70	130			
Bromochloromethane		10.5	ug/L	2.0	105	70	130			
Bromodichloromethane		11.0	ug/L	2.0	110	70	130			
Bromoform		10.2	ug/L	2.0	102	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Client: Hydrometrics Inc-Helena

Report Date: 07/01/09

Project: 1273 City of Helena

Work Order: H09060177

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B		Batch: R54267								
Sample ID: H09060177-013AMS	54	Sample Matrix Spike		Run: 1SATURN_090615A				06/15/09 20:57		
Bromomethane		9.12	ug/L	2.0	91	70	130			
Carbon disulfide		9.04	ug/L	2.0	90	70	130			
Carbon tetrachloride		8.40	ug/L	2.0	84	70	130			
Chlorobenzene		11.4	ug/L	2.0	114	70	130			
Chlorodibromomethane		11.0	ug/L	2.0	110	70	130			
Chloroethane		8.00	ug/L	2.0	80	70	130			
Chloroform		9.44	ug/L	2.0	94	70	130			
Chloromethane		10.2	ug/L	2.0	102	70	130			
1,2-Dibromo-3-chloropropane		9.84	ug/L	2.0	98	70	130			
1,2-Dibromoethane		9.76	ug/L	2.0	98	70	130			
Dibromomethane		11.0	ug/L	2.0	110	70	130			
1,2-Dichlorobenzene		11.1	ug/L	2.0	111	70	130			
1,4-Dichlorobenzene		10.9	ug/L	2.0	109	70	130			
trans-1,4-Dichloro-2-butene		9.68	ug/L	2.0	97	70	130			
Dichlorodifluoromethane		9.44	ug/L	2.0	94	70	130			
1,1-Dichloroethane		9.12	ug/L	2.0	91	70	130			
1,2-Dichloroethane		8.56	ug/L	2.0	86	70	130			
1,1-Dichloroethene		8.56	ug/L	2.0	86	70	130			
cis-1,2-Dichloroethene		9.04	ug/L	2.0	90	70	130			
trans-1,2-Dichloroethene		9.20	ug/L	2.0	92	70	130			
1,2-Dichloropropane		10.0	ug/L	2.0	100	70	130			
cis-1,3-Dichloropropene		11.0	ug/L	2.0	110	70	130			
trans-1,3-Dichloropropene		11.4	ug/L	2.0	114	70	130			
Ethylbenzene		11.4	ug/L	2.0	114	70	130			
2-Hexanone		106	ug/L	40	106	70	130			
Iodomethane		9.12	ug/L	2.0	91	70	130			
Methyl ethyl ketone		96.8	ug/L	40	97	70	130			
Methyl isobutyl ketone		99.2	ug/L	40	99	70	130			
Methylene chloride		8.96	ug/L	2.0	90	70	130			
Styrene		10.7	ug/L	2.0	107	70	130			
1,1,1,2-Tetrachloroethane		11.3	ug/L	2.0	113	70	130			
1,1,2,2-Tetrachloroethane		10.6	ug/L	2.0	106	70	130			
Tetrachloroethene		11.7	ug/L	2.0	117	70	130			
Toluene		11.0	ug/L	2.0	110	70	130			
1,1,1-Trichloroethane		13.8	ug/L	2.0	94	70	130			
1,1,2-Trichloroethane		12.2	ug/L	2.0	122	70	130			
Trichloroethene		10.4	ug/L	2.0	104	70	130			
Trichlorofluoromethane		9.76	ug/L	2.0	98	70	130			
1,2,3-Trichloropropane		9.84	ug/L	2.0	98	70	130			
Vinyl acetate		8.88	ug/L	2.0	89	70	130			
Vinyl chloride		9.04	ug/L	2.0	90	70	130			
m+p-Xylenes		21.1	ug/L	2.0	106	70	130			
o-Xylene		11.0	ug/L	2.0	110	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Client: Hydrometrics Inc-Helena

Project: 1273 City of Helena

Report Date: 07/01/09

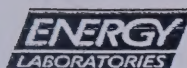
Work Order: H09060177

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										
Sample ID: H09060177-013AMS	54	Sample Matrix Spike		Run: 1SATURN_090615A				Batch: R54267		
Xylenes, Total		32.2	ug/L	2.0	107	70	130			06/15/09 20:57
Surr: 1,2-Dichloroethane-d4				2.0	101	70	130			
Surr: Dibromofluoromethane				2.0	86	70	130			
Surr: p-Bromofluorobenzene				2.0	114	70	130			
Surr: Toluene-d8				2.0	113	70	130			
Sample ID: H09060177-013AMSD	54	Sample Matrix Spike Duplicate		Run: 1SATURN_090615A				06/15/09 21:27		
Acetone		88.0	ug/L	40	88	70	130	7	20	
Acrylonitrile		96.0	ug/L	40	96	70	130	0.8	20	
Benzene		7.94	ug/L	2.0	79	70	130	2.7	20	
Bromochloromethane		9.68	ug/L	2.0	97	70	130	7.9	20	
Bromodichloromethane		11.0	ug/L	2.0	110	70	130	0	20	
Bromoform		11.3	ug/L	2.0	113	70	130	10	20	
Bromomethane		10.5	ug/L	2.0	105	70	130	14	20	
Carbon disulfide		9.84	ug/L	2.0	98	70	130	8.5	20	
Carbon tetrachloride		8.56	ug/L	2.0	86	70	130	1.9	20	
Chlorobenzene		11.4	ug/L	2.0	114	70	130	0.7	20	
Chlorodibromomethane		11.2	ug/L	2.0	112	70	130	1.4	20	
Chloroethane		8.80	ug/L	2.0	88	70	130	9.5	20	
Chloroform		9.12	ug/L	2.0	91	70	130	3.4	20	
Chloromethane		10.0	ug/L	2.0	100	70	130	2.4	20	
1,2-Dibromo-3-chloropropane		10.7	ug/L	2.0	107	70	130	8.6	20	
1,2-Dibromoethane		10.0	ug/L	2.0	100	70	130	2.4	20	
Dibromomethane		11.0	ug/L	2.0	110	70	130	0.7	20	
1,2-Dichlorobenzene		11.5	ug/L	2.0	115	70	130	3.5	20	
1,4-Dichlorobenzene		11.8	ug/L	2.0	118	70	130	7.8	20	
trans-1,4-Dichloro-2-butene		10.5	ug/L	2.0	105	70	130	7.9	20	
Dichlorodifluoromethane		10.4	ug/L	2.0	104	70	130	9.7	20	
1,1-Dichloroethane		9.04	ug/L	2.0	90	70	130	0.9	20	
1,2-Dichloroethane		8.64	ug/L	2.0	86	70	130	0.9	20	
1,1-Dichloroethene		8.64	ug/L	2.0	86	70	130	0.9	20	
cis-1,2-Dichloroethene		9.12	ug/L	2.0	91	70	130	0.9	20	
trans-1,2-Dichloroethene		9.20	ug/L	2.0	92	70	130	0	20	
1,2-Dichloropropane		9.92	ug/L	2.0	99	70	130	0.8	20	
cis-1,3-Dichloropropene		10.8	ug/L	2.0	108	70	130	1.5	20	
trans-1,3-Dichloropropene		11.4	ug/L	2.0	114	70	130	0.7	20	
Ethylbenzene		11.7	ug/L	2.0	117	70	130	2.8	20	
2-Hexanone		102	ug/L	40	102	70	130	3.8	20	
Iodomethane		9.76	ug/L	2.0	98	70	130	6.8	20	
Methyl ethyl ketone		86.4	ug/L	40	86	70	130	11	20	
Methyl isobutyl ketone		98.4	ug/L	40	98	70	130	0.8	20	
Methylene chloride		9.12	ug/L	2.0	91	70	130	1.8	20	
Styrene		10.9	ug/L	2.0	109	70	130	1.5	20	
1,1,1,2-Tetrachloroethane		11.6	ug/L	2.0	116	70	130	2.8	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



ENERGY LABORATORIES, INC. * 3161 E Lyndale (59604) * PO Box 5688 * Helena, MT 59601
Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@energylab.com

QA/QC Summary Report

Client: Hydrometrics Inc-Helena

Report Date: 07/01/09

Project: 1273 City of Helena

Work Order: H09060177

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R54267
Sample ID: H09060177-013AMSD 54 Sample Matrix Spike Duplicate										Run: 1SATURN_090615A 06/15/09 21:27
1,1,2,2-Tetrachloroethane		11.3	ug/L	2.0	113	70	130	5.8	20	
Tetrachloroethene		12.0	ug/L	2.0	120	70	130	2.7	20	
Toluene		10.7	ug/L	2.0	107	70	130	2.2	20	
1,1,1-Trichloroethane		13.3	ug/L	2.0	89	70	130	4.1	20	
1,1,2-Trichloroethane		11.3	ug/L	2.0	113	70	130	8.2	20	
Trichloroethene		11.2	ug/L	2.0	112	70	130	7.4	20	
Trichlorofluoromethane		10.8	ug/L	2.0	108	70	130	10	20	
1,2,3-Trichloropropane		9.20	ug/L	2.0	92	70	130	6.7	20	
Vinyl acetate		8.56	ug/L	2.0	86	70	130	3.7	20	
Vinyl chloride		10.3	ug/L	2.0	103	70	130	13	20	
m+p-Xylenes		22.6	ug/L	2.0	113	70	130	6.9	20	
o-Xylene		11.6	ug/L	2.0	116	70	130	4.9	20	
Xylenes, Total		34.2	ug/L	2.0	114	70	130	6.3	20	
Surr: 1,2-Dichloroethane-d4				2.0	94	70	130	0	20	
Surr: Dibromofluoromethane				2.0	83	70	130	0	20	
Surr: p-Bromofluorobenzene				2.0	126	70	130	0	20	
Surr: Toluene-d8				2.0	110	70	130	0	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

Energy Laboratories Inc

Workorder Receipt Checklist



H09060177

Hydrometrics Inc

Login completed by: Roxanne L. Tubbs

Reviewed by: Elizabeth Ulrich

Reviewed Date: 6/11/2009 9:16:00 AM

Date and Time Received: 6/10/2009 3:34 PM

Received by: eau

Carrier name: Hand Del

Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒
Chain of custody present?	Yes ☒	No ☐	
Chain of custody signed when relinquished and received?	Yes ☒	No ☐	
Chain of custody agrees with sample labels?	Yes ☒	No ☐	
Samples in proper container/bottle?	Yes ☒	No ☐	
Sample containers intact?	Yes ☒	No ☐	
Sufficient sample volume for indicated test?	Yes ☒	No ☐	
All samples received within holding time?	Yes ☒	No ☐	
Container/Temp Blank temperature:	1.9°C		
Water - VOA vials have zero headspace?	Yes ☒	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☒	Not Applicable ☐

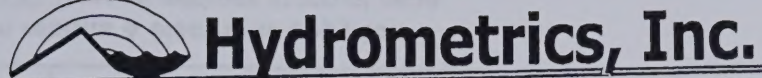
Contact and Corrective Action Comments:

Sulfuric acid added to nutrient sample HL-0906-113 in laboratory. 6/10/09 rt



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PROJ. NO.		PROJECT NAME		NO. OF CON- TAINERS	ANALYSIS												REMARKS
SAMPLERS: (Signature)					Commons UF/RAW	Nutrients UF/H ₂ SO ₄	Diss. Metal F/HNO ₃	CN UF/NaOH	Total Metals UF/HNO ₃	Total Recoverable Metals UF/HNO ₃	BTEX	TPH	VOL 2 HF/HCL	1 HF/R ₂ H ₂	8260*		
DATE	TIME	COMP	GRAB		SAMPLE NUMBER												
6/4/04	0845		X	HL-0906-100	3												
	1030			101													
	1010			102													
	1130			103													
	1300			104													
	1310			105													
	1320			106													
	1320			107													
	1350			108													
6/10/04	0750			109													
Relinquished (Signature)		Date/Time		Received by: (Signature)		Lab		P.O. #		Shipped via: Bus, Fed Ex, UPS							
Ritz		6/10/04 15:34		Liz Welch		Energy Labs		HLN09831		Other: _____ Air Bill # _____							
Relinquished (Signature)		Date/Time		Received by: (Signature)		Remarks											
						1.9°C Recd											
Relinquished (Signature)		Date/Time		Received for Laboratory by: (Signature)		Date/Time		Enclosed: ☐ Parameter sheet w/detection limits ☐ QA/QC standard mixing instructions ☐ Cover letter ☐ Other: _____									



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HEORM-1-5/99

Return results & electronic copy to:

Split Samples:
☐ Accepted ☐ Declined

Signature _____

ANALYTICAL SUMMARY REPORT

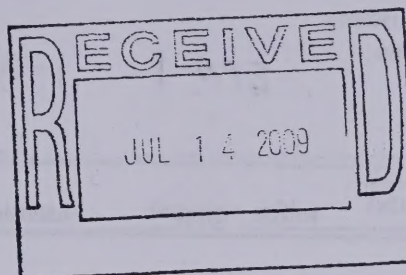
July 09, 2009

Richard Lane

Hydrometrics Inc-Helena

3020 Bozeman Ave

Helena, MT 59601-



Workorder No.: H09060204

Project Name: 1273 City of Helena

Energy Laboratories Inc received the following 7 samples for Hydrometrics Inc-Helena on 6/12/2009 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H09060204-001	HL-0906-120	06/11/09 8:00	06/12/09	Aqueous	Metals by ICP/ICPMS, Dissolved Cyanide, Total Manual Distillation Total Cyanide Digestion Chemical Oxygen Demand Conductivity Anions by Ion Chromatography Nitrogen, Nitrate + Nitrite pH 8260-Volatile Organic Comp, 40 CFR Part 258 App I
H09060204-002	HL-0906-121	06/11/09 9:20	06/12/09	Aqueous	Same As Above
H09060204-003	HL-0906-122	06/11/09 11:45	06/12/09	Aqueous	Same As Above
H09060204-004	HL-0906-123	06/11/09 12:30	06/12/09	Aqueous	Same As Above
H09060204-005	HL-0906-124	06/11/09 13:00	06/12/09	Aqueous	Same As Above
H09060204-006	HL-0906-125	06/11/09 13:45	06/12/09	Aqueous	Same As Above
H09060204-007	Trip Blank 041309(ts)(b) 0243	06/11/09 13:45	06/12/09	Trip Blank	8260-Volatile Organic Comp, 40 CFR Part 258 App I

BRANCH LABORATORY LOCATIONS

eli-b - Energy Laboratories, Inc. - Billings, MT, EPA # MT00005
 eli-c - Energy Laboratories, Inc. - Casper, WY, EPA# WY00002
 eli-g - Energy Laboratories, Inc. - Gillette, WY, EPA# WY00006
 eli-h - Energy Laboratories, Inc. - Helena, MT, EPA# MT00945
 eli-r - Energy Laboratories, Inc. - Rapid City, SD, EPA# SD00012
 eli-t - Energy Laboratories, Inc. - College Station, TX, EPA# TX01520

SUBCONTRACTING ANALYSIS

Subcontracting of sample analyses to an outside laboratory may be required. If so, ENERGY LABORATORIES, INC. will utilize its branch laboratories or qualified contract laboratories for this service. Any such laboratories are indicated within the Laboratory Analytical Report.

SAMPLE TEMPERATURE COMPLIANCE: 4°C (±2°C)

Temperature of samples received may not be considered properly preserved by accepted standards. Samples that are hand delivered immediately after collection shall be considered acceptable if there is evidence that the chilling process has begun.

ELI appreciates the opportunity to provide you with this analytical service. For additional information, including certifications, and analytical services visit our web page www.energylab.com.

Report Approved By: Francis J. Buckner

LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060204-001
Client Sample ID: HL-0906-120

EPA-1

Report Date: 07/09/09
Collection Date: 06/11/09 08:00
Date Received: 06/12/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.2	s.u.		0.1		A4500-H B	06/12/09 17:40 / JG
Conductivity	1450	umhos/cm		1		A2510 B	06/12/09 16:42 / JG
INORGANICS							
Cyanide, Total	ND	mg/L		0.005		Kelada mod	06/16/09 14:56 / eli-b
Chloride	120	mg/L		1		E300.0	06/18/09 10:38 / hm
Sulfate	100	mg/L		1		E300.0	06/18/09 10:38 / hm
AGGREGATE ORGANICS							
Oxygen Demand, Chemical (COD)	4	mg/L		1		E410.4	06/12/09 15:00 / stp
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	3.99	mg/L		0.05		E353.2	06/15/09 12:38 / stp
METALS, DISSOLVED							
Antimony	ND	mg/L		0.005		E200.8	06/18/09 03:25 / eli-b
Arsenic	ND	mg/L		0.005		E200.8	06/18/09 03:25 / eli-b
Barium	ND	mg/L		0.1		E200.7	06/17/09 12:52 / eli-b
Beryllium	ND	mg/L		0.001		E200.7	06/17/09 12:52 / eli-b
Cadmium	0.001	mg/L		0.001		E200.8	06/18/09 03:25 / eli-b
Chromium	ND	mg/L		0.01		E200.7	06/17/09 12:52 / eli-b
Cobalt	ND	mg/L		0.01		E200.7	06/17/09 12:52 / eli-b
Copper	ND	mg/L		0.01		E200.7	06/17/09 12:52 / eli-b
Iron	0.08	mg/L		0.03		E200.7	06/17/09 12:52 / eli-b
Lead	ND	mg/L		0.01		E200.8	06/18/09 03:25 / eli-b
Mercury	ND	mg/L		0.001		E200.8	06/18/09 03:25 / eli-b
Nickel	0.01	mg/L		0.01		E200.7	06/17/09 12:52 / eli-b
Selenium	ND	mg/L		0.005		E200.8	06/18/09 03:25 / eli-b
Silver	ND	mg/L		0.005		E200.7	06/17/09 12:52 / eli-b
Thallium	ND	mg/L		0.005		E200.8	06/18/09 03:25 / eli-b
Vanadium	ND	mg/L		0.1		E200.7	06/17/09 12:52 / eli-b
Zinc	ND	mg/L		0.01		E200.7	06/17/09 12:52 / eli-b
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	06/15/09 17:31 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	06/15/09 17:31 / abb
Benzene	ND	ug/L		1.0		SW8260B	06/15/09 17:31 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	06/15/09 17:31 / abb
Bromodichloromethane	ND	ug/L		1.0		SW8260B	06/15/09 17:31 / abb
Bromoform	ND	ug/L		1.0		SW8260B	06/15/09 17:31 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	06/15/09 17:31 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	06/15/09 17:31 / abb

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

 Client: Hydrometrics Inc-Helena
 Project: 1273 City of Helena
 Lab ID: H09060204-001
 Client Sample ID: HL-0906-120

 Report Date: 07/09/09
 Collection Date: 06/11/09 08:00
 Date Received: 06/12/09
 Matrix: Aqueous

EPA-1

1-29

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	06/15/09 17:31 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	06/15/09 17:31 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	06/15/09 17:31 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	06/15/09 17:31 / abb
Chloroform	ND	ug/L		1.0		SW8260B	06/15/09 17:31 / abb
Chloromethane	ND	ug/L		1.0		SW8260B	06/15/09 17:31 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	06/15/09 17:31 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	06/15/09 17:31 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	06/15/09 17:31 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/15/09 17:31 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/15/09 17:31 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	06/15/09 17:31 / abb
Dichlorodifluoromethane	0.43	ug/L	J	1.0		SW8260B	06/15/09 17:31 / abb
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	06/15/09 17:31 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	06/15/09 17:31 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	06/15/09 17:31 / abb
cis-1,2-Dichloroethene	0.56	ug/L	J	1.0		SW8260B	06/15/09 17:31 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	06/15/09 17:31 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	06/15/09 17:31 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/15/09 17:31 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/15/09 17:31 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	06/15/09 17:31 / abb
2-Hexanone	ND	ug/L		20		SW8260B	06/15/09 17:31 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	06/15/09 17:31 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	06/15/09 17:31 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	06/15/09 17:31 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	06/15/09 17:31 / abb
Styrene	ND	ug/L		1.0		SW8260B	06/15/09 17:31 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/15/09 17:31 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/15/09 17:31 / abb
Tetrachloroethene	1.8	ug/L		1.0		SW8260B	06/15/09 17:31 / abb
Toluene	ND	ug/L		1.0		SW8260B	06/15/09 17:31 / abb
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	06/15/09 17:31 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	06/15/09 17:31 / abb
Trichloroethene	ND	ug/L		1.0		SW8260B	06/15/09 17:31 / abb
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	06/15/09 17:31 / abb
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	06/15/09 17:31 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	06/15/09 17:31 / abb
Vinyl chloride	ND	ug/L		1.0		SW8260B	06/15/09 17:31 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	06/15/09 17:31 / abb
o-Xylene	ND	ug/L		1.0		SW8260B	06/15/09 17:31 / abb
Xylenes, Total	ND	ug/L		1.0		SW8260B	06/15/09 17:31 / abb
Surr: 1,2-Dichloroethane-d4	99.0	%REC		70-130		SW8260B	06/15/09 17:31 / abb

 Report Definitions: RL - Analyte reporting limit.
 QCL - Quality control limit.

 MCL - Maximum contaminant level.
 ND - Not detected at the reporting limit.

J - Estimated value. The analyte was present but less than the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060204-001
Client Sample ID: HL-0906-120

Report Date: 07/09/09
Collection Date: 06/11/09 08:00
DateReceived: 06/12/09
Matrix: Aqueous

EPA-1

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Surr: Dibromofluoromethane	87.0	%REC		70-130		SW8260B	06/15/09 17:31 / abb
Surr: p-Bromofluorobenzene	114	%REC		70-130		SW8260B	06/15/09 17:31 / abb
Surr: Toluene-d8	110	%REC		70-130		SW8260B	06/15/09 17:31 / abb

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060204-002
Client Sample ID: HL-0906-121

Report Date: 07/09/09
Collection Date: 06/11/09 09:20
Date Received: 06/12/09
Matrix: Aqueous

MPC-5

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.4	s.u.		0.1		A4500-H B	06/12/09 17:45 / JG
Conductivity	2800	umhos/cm		1		A2510 B	06/12/09 16:44 / JG
INORGANICS							
Cyanide, Total	4.05	mg/L	D	0.06		Kelada mod	06/23/09 11:46 / eli-b
Chloride	29	mg/L		1		E300.0	06/18/09 10:54 / hm
Sulfate	890	mg/L		1		E300.0	06/18/09 10:54 / hm
AGGREGATE ORGANICS							
Oxygen Demand, Chemical (COD)	36	mg/L		1		E410.4	06/12/09 15:00 / stp
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	32.8	mg/L	D	0.5		E353.2	06/15/09 12:40 / stp
METALS, DISSOLVED							
Antimony	ND	mg/L		0.005		E200.8	06/18/09 03:29 / eli-b
Arsenic	0.006	mg/L		0.005		E200.8	06/18/09 03:29 / eli-b
Barium	ND	mg/L		0.1		E200.7	06/17/09 12:55 / eli-b
Beryllium	ND	mg/L		0.001		E200.7	06/17/09 12:55 / eli-b
Cadmium	0.001	mg/L		0.001		E200.8	06/18/09 03:29 / eli-b
Chromium	ND	mg/L		0.01		E200.7	06/17/09 12:55 / eli-b
Cobalt	ND	mg/L		0.01		E200.7	06/17/09 12:55 / eli-b
Copper	ND	mg/L		0.01		E200.7	06/17/09 12:55 / eli-b
Iron	1.02	mg/L		0.03		E200.7	06/17/09 12:55 / eli-b
Lead	ND	mg/L		0.01		E200.8	06/18/09 03:29 / eli-b
Mercury	ND	mg/L		0.001		E200.8	06/18/09 03:29 / eli-b
Nickel	0.01	mg/L		0.01		E200.8	06/18/09 03:29 / eli-b
Selenium	0.010	mg/L		0.005		E200.8	06/18/09 03:29 / eli-b
Silver	ND	mg/L		0.005		E200.8	06/18/09 03:29 / eli-b
Thallium	ND	mg/L		0.005		E200.8	06/18/09 03:29 / eli-b
Vanadium	ND	mg/L		0.1		E200.7	06/17/09 12:55 / eli-b
Zinc	ND	mg/L		0.01		E200.7	06/17/09 12:55 / eli-b
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	06/15/09 18:00 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	06/15/09 18:00 / abb
Benzene	5.3	ug/L		1.0		SW8260B	06/15/09 18:00 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	06/15/09 18:00 / abb
Bromodichloromethane	ND	ug/L		1.0		SW8260B	06/15/09 18:00 / abb
Bromoform	ND	ug/L		1.0		SW8260B	06/15/09 18:00 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	06/15/09 18:00 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	06/15/09 18:00 / abb

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

Definitions: QCL - Quality control limit.

ND - Not detected at the reporting limit.

D - RL increased due to sample matrix interference.

LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060204-002
Client Sample ID: HL-0906-121

MPC-S

Report Date: 07/09/09
Collection Date: 06/11/09 09:20
Date Received: 06/12/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	06/15/09 18:00 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	06/15/09 18:00 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	06/15/09 18:00 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	06/15/09 18:00 / abb
Chloroform	0.55	ug/L	J	1.0		SW8260B	06/15/09 18:00 / abb
Chloromethane	ND	ug/L		1.0		SW8260B	06/15/09 18:00 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	06/15/09 18:00 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	06/15/09 18:00 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	06/15/09 18:00 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/15/09 18:00 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/15/09 18:00 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	06/15/09 18:00 / abb
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	06/15/09 18:00 / abb
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	06/15/09 18:00 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	06/15/09 18:00 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	06/15/09 18:00 / abb
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	06/15/09 18:00 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	06/15/09 18:00 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	06/15/09 18:00 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/15/09 18:00 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/15/09 18:00 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	06/15/09 18:00 / abb
2-Hexanone	ND	ug/L		20		SW8260B	06/15/09 18:00 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	06/15/09 18:00 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	06/15/09 18:00 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	06/15/09 18:00 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	06/15/09 18:00 / abb
Styrene	ND	ug/L		1.0		SW8260B	06/15/09 18:00 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/15/09 18:00 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/15/09 18:00 / abb
Tetrachloroethene	0.38	ug/L	J	1.0		SW8260B	06/15/09 18:00 / abb
Toluene	ND	ug/L		1.0		SW8260B	06/15/09 18:00 / abb
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	06/15/09 18:00 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	06/15/09 18:00 / abb
Trichloroethene	ND	ug/L		1.0		SW8260B	06/15/09 18:00 / abb
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	06/15/09 18:00 / abb
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	06/15/09 18:00 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	06/15/09 18:00 / abb
Vinyl chloride	ND	ug/L		1.0		SW8260B	06/15/09 18:00 / abb
m+p-Xylenes	3.5	ug/L		1.0		SW8260B	06/15/09 18:00 / abb
o-Xylene	4.4	ug/L		1.0		SW8260B	06/15/09 18:00 / abb
Xylenes, Total	7.9	ug/L		1.0		SW8260B	06/15/09 18:00 / abb
Surr: 1,2-Dichloroethane-d4	94.0	%REC		70-130		SW8260B	06/15/09 18:00 / abb

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

J - Estimated value. The analyte was present but less than the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060204-002
Client Sample ID: HL-0906-121

Report Date: 07/09/09
Collection Date: 06/11/09 09:20
DateReceived: 06/12/09
Matrix: Aqueous

MPC-5

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Surr: Dibromofluoromethane	88.0	%REC		70-130		SW8260B	06/15/09 18:00 / abb
Surr: p-Bromofluorobenzene	118	%REC		70-130		SW8260B	06/15/09 18:00 / abb
Surr: Toluene-d8	112	%REC		70-130		SW8260B	06/15/09 18:00 / abb

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060204-003
Client Sample ID: HL-0906-122

HL-99-1

Report Date: 07/09/09
Collection Date: 06/11/09 11:45
Date Received: 06/12/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.3	s.u.		0.1		A4500-H B	06/12/09 17:46 / JG
Conductivity	1200	umhos/cm		1		A2510 B	06/12/09 16:47 / JG
INORGANICS							
Cyanide, Total	ND	mg/L		0.005		Kelada mod	06/16/09 15:46 / eli-b
Chloride	74	mg/L		1		E300.0	06/18/09 11:11 / hm
Sulfate	170	mg/L		1		E300.0	06/18/09 11:11 / hm
AGGREGATE ORGANICS							
Oxygen Demand, Chemical (COD)	3	mg/L		1		E410.4	06/12/09 15:00 / stp
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	11.1	mg/L	D	0.1		E353.2	06/15/09 12:42 / stp
METALS, DISSOLVED							
Antimony	ND	mg/L		0.005		E200.8	06/18/09 03:33 / eli-b
Arsenic	ND	mg/L		0.005		E200.8	06/18/09 03:33 / eli-b
Barium	ND	mg/L		0.1		E200.7	06/17/09 12:59 / eli-b
Beryllium	ND	mg/L		0.001		E200.7	06/17/09 12:59 / eli-b
Cadmium	ND	mg/L		0.001		E200.8	06/18/09 03:33 / eli-b
Chromium	ND	mg/L		0.01		E200.7	06/17/09 12:59 / eli-b
Cobalt	ND	mg/L		0.01		E200.7	06/17/09 12:59 / eli-b
Copper	ND	mg/L		0.01		E200.7	06/17/09 12:59 / eli-b
Iron	ND	mg/L		0.03		E200.7	06/17/09 12:59 / eli-b
Lead	ND	mg/L		0.01		E200.8	06/18/09 03:33 / eli-b
Mercury	ND	mg/L		0.001		E200.8	06/18/09 03:33 / eli-b
Nickel	ND	mg/L		0.01		E200.7	06/17/09 12:59 / eli-b
Selenium	ND	mg/L		0.005		E200.8	06/18/09 03:33 / eli-b
Silver	ND	mg/L		0.005		E200.7	06/17/09 12:59 / eli-b
Thallium	ND	mg/L		0.005		E200.8	06/18/09 03:33 / eli-b
Vanadium	ND	mg/L		0.1		E200.7	06/17/09 12:59 / eli-b
Zinc	0.01	mg/L		0.01		E200.7	06/17/09 12:59 / eli-b
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	06/18/09 15:55 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	06/18/09 15:55 / abb
Benzene	ND	ug/L		1.0		SW8260B	06/18/09 15:55 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	06/18/09 15:55 / abb
Bromodichloromethane	ND	ug/L		1.0		SW8260B	06/18/09 15:55 / abb
Bromoform	ND	ug/L		1.0		SW8260B	06/18/09 15:55 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	06/18/09 15:55 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	06/18/09 15:55 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060204-003
Client Sample ID: HL-0906-122

HL-99-1

Report Date: 07/09/09
Collection Date: 06/11/09 11:45
Date Received: 06/12/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	06/18/09 15:55 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	06/18/09 15:55 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	06/18/09 15:55 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	06/18/09 15:55 / abb
Chloroform	2.8	ug/L		1.0		SW8260B	06/18/09 15:55 / abb
Chloromethane	ND	ug/L		1.0		SW8260B	06/18/09 15:55 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	06/18/09 15:55 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	06/18/09 15:55 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	06/18/09 15:55 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/18/09 15:55 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/18/09 15:55 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	06/18/09 15:55 / abb
Dichlorodifluoromethane	0.75	ug/L	J	1.0		SW8260B	06/18/09 15:55 / abb
1,1-Dichloroethane	0.69	ug/L	J	1.0		SW8260B	06/18/09 15:55 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	06/18/09 15:55 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	06/18/09 15:55 / abb
cis-1,2-Dichloroethene	1.7	ug/L		1.0		SW8260B	06/18/09 15:55 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	06/18/09 15:55 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	06/18/09 15:55 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/18/09 15:55 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/18/09 15:55 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	06/18/09 15:55 / abb
2-Hexanone	ND	ug/L		20		SW8260B	06/18/09 15:55 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	06/18/09 15:55 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	06/18/09 15:55 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	06/18/09 15:55 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	06/18/09 15:55 / abb
Styrene	ND	ug/L		1.0		SW8260B	06/18/09 15:55 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/18/09 15:55 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/18/09 15:55 / abb
Tetrachloroethene	3.7	ug/L		1.0		SW8260B	06/18/09 15:55 / abb
Toluene	ND	ug/L		1.0		SW8260B	06/18/09 15:55 / abb
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	06/18/09 15:55 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	06/18/09 15:55 / abb
Trichloroethene	0.79	ug/L	J	1.0		SW8260B	06/18/09 15:55 / abb
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	06/18/09 15:55 / abb
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	06/18/09 15:55 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	06/18/09 15:55 / abb
Vinyl chloride	ND	ug/L		1.0		SW8260B	06/18/09 15:55 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	06/18/09 15:55 / abb
o-Xylene	ND	ug/L		1.0		SW8260B	06/18/09 15:55 / abb
Xylenes, Total	ND	ug/L		1.0		SW8260B	06/18/09 15:55 / abb
Surr: 1,2-Dichloroethane-d4	100	%REC		70-130		SW8260B	06/18/09 15:55 / abb

Report RL - Analyte reporting limit.

Definitions: QCL - Quality control limit.

J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060204-003
Client Sample ID: HL-0906-122

Report Date: 07/09/09
Collection Date: 06/11/09 11:45
DateReceived: 06/12/09
Matrix: Aqueous

HL-99-1

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Surr: Dibromofluoromethane	92.0	%REC		70-130		SW8260B	06/18/09 15:55 / abb
Surr: p-Bromofluorobenzene	121	%REC		70-130		SW8260B	06/18/09 15:55 / abb
Surr: Toluene-d8	104	%REC		70-130		SW8260B	06/18/09 15:55 / abb

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060204-004
Client Sample ID: HL-0906-123

HL-99-2

Report Date: 07/09/09
Collection Date: 06/11/09 12:30
Date Received: 06/12/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.6	s.u.		0.1		A4500-H B	06/12/09 17:48 / JG
Conductivity	863	umhos/cm		1		A2510 B	06/12/09 16:50 / JG
INORGANICS							
Cyanide, Total	0.058	mg/L		0.005		Kelada mod	06/23/09 11:48 / eli-b
Chloride	41	mg/L		1		E300.0	06/18/09 12:00 / hm
Sulfate	120	mg/L		1		E300.0	06/18/09 12:00 / hm
AGGREGATE ORGANICS							
Oxygen Demand, Chemical (COD)	ND	mg/L		1		E410.4	06/12/09 15:00 / stp
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	7.8	mg/L	D	0.1		E353.2	06/15/09 12:44 / stp
METALS, DISSOLVED							
Antimony	ND	mg/L		0.005		E200.8	06/18/09 03:37 / eli-b
Arsenic	ND	mg/L		0.005		E200.8	06/18/09 03:37 / eli-b
Barium	ND	mg/L		0.1		E200.7	06/17/09 13:02 / eli-b
Beryllium	ND	mg/L		0.001		E200.7	06/17/09 13:02 / eli-b
Cadmium	0.002	mg/L		0.001		E200.8	06/18/09 03:37 / eli-b
Chromium	ND	mg/L		0.01		E200.7	06/17/09 13:02 / eli-b
Cobalt	ND	mg/L		0.01		E200.7	06/17/09 13:02 / eli-b
Copper	ND	mg/L		0.01		E200.7	06/17/09 13:02 / eli-b
Iron	ND	mg/L		0.03		E200.7	06/17/09 13:02 / eli-b
Lead	ND	mg/L		0.01		E200.8	06/18/09 03:37 / eli-b
Mercury	ND	mg/L		0.001		E200.8	06/18/09 03:37 / eli-b
Nickel	ND	mg/L		0.01		E200.7	06/17/09 13:02 / eli-b
Selenium	0.006	mg/L		0.005		E200.8	06/18/09 03:37 / eli-b
Silver	ND	mg/L		0.005		E200.7	06/17/09 13:02 / eli-b
Thallium	ND	mg/L		0.005		E200.8	06/18/09 03:37 / eli-b
Vanadium	ND	mg/L		0.1		E200.7	06/17/09 13:02 / eli-b
Zinc	ND	mg/L		0.01		E200.7	06/17/09 13:02 / eli-b
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	06/15/09 18:59 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	06/15/09 18:59 / abb
Benzene	ND	ug/L		1.0		SW8260B	06/15/09 18:59 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	06/15/09 18:59 / abb
Bromodichloromethane	ND	ug/L		1.0		SW8260B	06/15/09 18:59 / abb
Bromoform	ND	ug/L		1.0		SW8260B	06/15/09 18:59 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	06/15/09 18:59 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	06/15/09 18:59 / abb

Report RL - Analyte reporting limit.

Definitions: QCL - Quality control limit.

D - RL increased due to sample matrix interference.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060204-004
Client Sample ID: HL-0906-123

HL-99-2

Report Date: 07/09/09
Collection Date: 06/11/09 12:30
Date Received: 06/12/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	06/15/09 18:59 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	06/15/09 18:59 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	06/15/09 18:59 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	06/15/09 18:59 / abb
Chloroform	1.5	ug/L		1.0		SW8260B	06/15/09 18:59 / abb
Chloromethane	ND	ug/L		1.0		SW8260B	06/15/09 18:59 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	06/15/09 18:59 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	06/15/09 18:59 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	06/15/09 18:59 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/15/09 18:59 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/15/09 18:59 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	06/15/09 18:59 / abb
Dichlorodifluoromethane	1.3	ug/L		1.0		SW8260B	06/15/09 18:59 / abb
1,1-Dichloroethane	1.4	ug/L		1.0		SW8260B	06/15/09 18:59 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	06/15/09 18:59 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	06/15/09 18:59 / abb
cis-1,2-Dichloroethene	0.56	ug/L	J	1.0		SW8260B	06/15/09 18:59 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	06/15/09 18:59 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	06/15/09 18:59 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/15/09 18:59 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/15/09 18:59 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	06/15/09 18:59 / abb
2-Hexanone	ND	ug/L		20		SW8260B	06/15/09 18:59 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	06/15/09 18:59 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	06/15/09 18:59 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	06/15/09 18:59 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	06/15/09 18:59 / abb
Styrene	ND	ug/L		1.0		SW8260B	06/15/09 18:59 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/15/09 18:59 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/15/09 18:59 / abb
Tetrachloroethene	4.3	ug/L		1.0		SW8260B	06/15/09 18:59 / abb
Toluene	ND	ug/L		1.0		SW8260B	06/15/09 18:59 / abb
1,1,1-Trichloroethane	0.33	ug/L	J	1.0		SW8260B	06/15/09 18:59 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	06/15/09 18:59 / abb
Trichloroethene	0.80	ug/L	J	1.0		SW8260B	06/15/09 18:59 / abb
Trichlorofluoromethane	0.36	ug/L	J	1.0		SW8260B	06/15/09 18:59 / abb
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	06/15/09 18:59 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	06/15/09 18:59 / abb
Vinyl chloride	ND	ug/L		1.0		SW8260B	06/15/09 18:59 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	06/15/09 18:59 / abb
o-Xylene	ND	ug/L		1.0		SW8260B	06/15/09 18:59 / abb
Xylenes, Total	ND	ug/L		1.0		SW8260B	06/15/09 18:59 / abb
Surr: 1,2-Dichloroethane-d4	103	%REC		70-130		SW8260B	06/15/09 18:59 / abb

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

Definitions: QCL - Quality control limit.

ND - Not detected at the reporting limit.

J - Estimated value. The analyte was present but less than the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060204-004
Client Sample ID: HL-0906-123

Report Date: 07/09/09
Collection Date: 06/11/09 12:30
DateReceived: 06/12/09
Matrix: Aqueous

HL-88-2

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Surr: Dibromofluoromethane	93.0	%REC		70-130		SW8260B	06/15/09 18:59 / abb
Surr: p-Bromofluorobenzene	116	%REC		70-130		SW8260B	06/15/09 18:59 / abb
Surr: Toluene-d8	115	%REC		70-130		SW8260B	06/15/09 18:59 / abb

Report	RL - Analyte reporting limit.
Definitions:	QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060204-005
Client Sample ID: HL-0906-124

HL-99-3

Report Date: 07/09/09
Collection Date: 06/11/09 13:00
Date Received: 06/12/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.4	s.u.		0.1		A4500-H B	06/12/09 17:54 / JG
Conductivity	940	umhos/cm		1		A2510 B	06/12/09 16:51 / JG
INORGANICS							
Cyanide, Total	0.036	mg/L		0.005		Kelada mod	06/23/09 11:50 / eli-b
Chloride	49	mg/L		1		E300.0	06/18/09 12:16 / hm
Sulfate	170	mg/L		1		E300.0	06/18/09 12:16 / hm
AGGREGATE ORGANICS							
Oxygen Demand, Chemical (COD)	ND	mg/L		1		E410.4	06/12/09 15:00 / stp
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	10.7	mg/L	D	0.1		E353.2	06/15/09 12:46 / stp
METALS, DISSOLVED							
Antimony	ND	mg/L		0.005		E200.8	06/18/09 03:57 / eli-b
Arsenic	ND	mg/L		0.005		E200.8	06/18/09 03:57 / eli-b
Barium	ND	mg/L		0.1		E200.7	06/17/09 13:20 / eli-b
Beryllium	ND	mg/L		0.001		E200.7	06/17/09 13:20 / eli-b
Cadmium	ND	mg/L		0.001		E200.8	06/18/09 03:57 / eli-b
Chromium	ND	mg/L		0.01		E200.7	06/17/09 13:20 / eli-b
Cobalt	ND	mg/L		0.01		E200.7	06/17/09 13:20 / eli-b
Copper	ND	mg/L		0.01		E200.7	06/17/09 13:20 / eli-b
Iron	ND	mg/L		0.03		E200.7	06/17/09 13:20 / eli-b
Lead	ND	mg/L		0.01		E200.8	06/18/09 03:57 / eli-b
Mercury	ND	mg/L		0.001		E200.8	06/18/09 03:57 / eli-b
Nickel	ND	mg/L		0.01		E200.7	06/17/09 13:20 / eli-b
Selenium	ND	mg/L		0.005		E200.8	06/18/09 03:57 / eli-b
Silver	ND	mg/L		0.005		E200.7	06/17/09 13:20 / eli-b
Thallium	ND	mg/L		0.005		E200.8	06/18/09 03:57 / eli-b
Vanadium	ND	mg/L		0.1		E200.7	06/17/09 13:20 / eli-b
Zinc	ND	mg/L		0.01		E200.7	06/17/09 13:20 / eli-b
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	06/15/09 19:29 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	06/15/09 19:29 / abb
Benzene	ND	ug/L		1.0		SW8260B	06/15/09 19:29 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	06/15/09 19:29 / abb
Bromodichloromethane	ND	ug/L		1.0		SW8260B	06/15/09 19:29 / abb
Bromoform	ND	ug/L		1.0		SW8260B	06/15/09 19:29 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	06/15/09 19:29 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	06/15/09 19:29 / abb

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060204-005
Client Sample ID: HL-0906-124

HL-99-3

Report Date: 07/09/09
Collection Date: 06/11/09 13:00
Date Received: 06/12/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	06/15/09 19:29 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	06/15/09 19:29 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	06/15/09 19:29 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	06/15/09 19:29 / abb
Chloroform	2.3	ug/L		1.0		SW8260B	06/15/09 19:29 / abb
Chloromethane	ND	ug/L		1.0		SW8260B	06/15/09 19:29 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	06/15/09 19:29 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	06/15/09 19:29 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	06/15/09 19:29 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/15/09 19:29 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/15/09 19:29 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	06/15/09 19:29 / abb
Dichlorodifluoromethane	2.1	ug/L		1.0		SW8260B	06/15/09 19:29 / abb
1,1-Dichloroethane	2.7	ug/L		1.0		SW8260B	06/15/09 19:29 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	06/15/09 19:29 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	06/15/09 19:29 / abb
cis-1,2-Dichloroethene	0.65	ug/L	J	1.0		SW8260B	06/15/09 19:29 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	06/15/09 19:29 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	06/15/09 19:29 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/15/09 19:29 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/15/09 19:29 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	06/15/09 19:29 / abb
2-Hexanone	ND	ug/L		20		SW8260B	06/15/09 19:29 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	06/15/09 19:29 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	06/15/09 19:29 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	06/15/09 19:29 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	06/15/09 19:29 / abb
Styrene	ND	ug/L		1.0		SW8260B	06/15/09 19:29 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/15/09 19:29 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/15/09 19:29 / abb
Tetrachloroethene	7.4	ug/L		1.0		SW8260B	06/15/09 19:29 / abb
Toluene	ND	ug/L		1.0		SW8260B	06/15/09 19:29 / abb
1,1,1-Trichloroethane	0.34	ug/L	J	1.0		SW8260B	06/15/09 19:29 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	06/15/09 19:29 / abb
Trichloroethene	1.4	ug/L		1.0		SW8260B	06/15/09 19:29 / abb
Trichlorofluoromethane	0.52	ug/L	J	1.0		SW8260B	06/15/09 19:29 / abb
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	06/15/09 19:29 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	06/15/09 19:29 / abb
Vinyl chloride	ND	ug/L		1.0		SW8260B	06/15/09 19:29 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	06/15/09 19:29 / abb
o-Xylene	ND	ug/L		1.0		SW8260B	06/15/09 19:29 / abb
Xylenes, Total	ND	ug/L		1.0		SW8260B	06/15/09 19:29 / abb
Surr: 1,2-Dichloroethane-d4	103	%REC		70-130		SW8260B	06/15/09 19:29 / abb

Report RL - Analyte reporting limit.

Definitions: QCL - Quality control limit.

J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060204-005
Client Sample ID: HL-0906-124

Report Date: 07/09/09
Collection Date: 06/11/09 13:00
DateReceived: 06/12/09
Matrix: Aqueous

HL-99-3

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Surr: Dibromofluoromethane	91.0	%REC		70-130		SW8260B	06/15/09 19:29 / abb
Surr: p-Bromofluorobenzene	111	%REC		70-130		SW8260B	06/15/09 19:29 / abb
Surr: Toluene-d8	114	%REC		70-130		SW8260B	06/15/09 19:29 / abb

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060204-006
Client Sample ID: HL-0906-125

*Equipment
Blank*

Report Date: 07/09/09
Collection Date: 06/11/09 13:45
Date Received: 06/12/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	5.6	s.u.		0.1		A4500-H B	06/12/09 17:56 / JG
Conductivity	2	umhos/cm		1		A2510 B	06/12/09 16:53 / JG
INORGANICS							
Cyanide, Total	ND	mg/L		0.005		Kelada mod	06/16/09 15:05 / eli-b
Chloride	ND	mg/L		1		E300.0	06/18/09 12:33 / hm
Sulfate	ND	mg/L		1		E300.0	06/18/09 12:33 / hm
AGGREGATE ORGANICS							
Oxygen Demand, Chemical (COD)	ND	mg/L		1		E410.4	06/12/09 15:00 / stp
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.05		E353.2	06/15/09 12:48 / stp
METALS, DISSOLVED							
Antimony	ND	mg/L		0.005		E200.8	06/18/09 04:01 / eli-b
Arsenic	ND	mg/L		0.005		E200.8	06/18/09 04:01 / eli-b
Barium	ND	mg/L		0.1		E200.7	06/17/09 13:23 / eli-b
Beryllium	ND	mg/L		0.001		E200.7	06/17/09 13:23 / eli-b
Cadmium	ND	mg/L		0.001		E200.8	06/18/09 04:01 / eli-b
Chromium	ND	mg/L		0.01		E200.7	06/17/09 13:23 / eli-b
Cobalt	ND	mg/L		0.01		E200.7	06/17/09 13:23 / eli-b
Copper	ND	mg/L		0.01		E200.7	06/17/09 13:23 / eli-b
Iron	ND	mg/L		0.03		E200.7	06/17/09 13:23 / eli-b
Lead	ND	mg/L		0.01		E200.8	06/18/09 04:01 / eli-b
Mercury	ND	mg/L		0.001		E200.8	06/18/09 04:01 / eli-b
Nickel	ND	mg/L		0.01		E200.7	06/17/09 13:23 / eli-b
Selenium	ND	mg/L		0.005		E200.8	06/18/09 04:01 / eli-b
Silver	ND	mg/L		0.005		E200.7	06/17/09 13:23 / eli-b
Thallium	ND	mg/L		0.005		E200.8	06/18/09 04:01 / eli-b
Vanadium	ND	mg/L		0.1		E200.7	06/17/09 13:23 / eli-b
Zinc	ND	mg/L		0.01		E200.7	06/17/09 13:23 / eli-b
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	06/15/09 19:58 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	06/15/09 19:58 / abb
Benzene	ND	ug/L		1.0		SW8260B	06/15/09 19:58 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	06/15/09 19:58 / abb
Bromodichloromethane	ND	ug/L		1.0		SW8260B	06/15/09 19:58 / abb
Bromoform	ND	ug/L		1.0		SW8260B	06/15/09 19:58 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	06/15/09 19:58 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	06/15/09 19:58 / abb

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060204-006
Client Sample ID: HL-0906-125

Equipment Blank

Report Date: 07/09/09
Collection Date: 06/11/09 13:45
Date Received: 06/12/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	06/15/09 19:58 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	06/15/09 19:58 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	06/15/09 19:58 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	06/15/09 19:58 / abb
Chloroform	0.55	ug/L	J	1.0		SW8260B	06/15/09 19:58 / abb
Chloromethane	ND	ug/L		1.0		SW8260B	06/15/09 19:58 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	06/15/09 19:58 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	06/15/09 19:58 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	06/15/09 19:58 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/15/09 19:58 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/15/09 19:58 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	06/15/09 19:58 / abb
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	06/15/09 19:58 / abb
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	06/15/09 19:58 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	06/15/09 19:58 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	06/15/09 19:58 / abb
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	06/15/09 19:58 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	06/15/09 19:58 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	06/15/09 19:58 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/15/09 19:58 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/15/09 19:58 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	06/15/09 19:58 / abb
2-Hexanone	ND	ug/L		20		SW8260B	06/15/09 19:58 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	06/15/09 19:58 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	06/15/09 19:58 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	06/15/09 19:58 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	06/15/09 19:58 / abb
Styrene	ND	ug/L		1.0		SW8260B	06/15/09 19:58 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/15/09 19:58 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/15/09 19:58 / abb
Tetrachloroethene	ND	ug/L		1.0		SW8260B	06/15/09 19:58 / abb
Toluene	ND	ug/L		1.0		SW8260B	06/15/09 19:58 / abb
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	06/15/09 19:58 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	06/15/09 19:58 / abb
Trichloroethene	ND	ug/L		1.0		SW8260B	06/15/09 19:58 / abb
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	06/15/09 19:58 / abb
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	06/15/09 19:58 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	06/15/09 19:58 / abb
Vinyl chloride	ND	ug/L		1.0		SW8260B	06/15/09 19:58 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	06/15/09 19:58 / abb
o-Xylene	ND	ug/L		1.0		SW8260B	06/15/09 19:58 / abb
Xylenes, Total	ND	ug/L		1.0		SW8260B	06/15/09 19:58 / abb
Surr: 1,2-Dichloroethane-d4	102	%REC		70-130		SW8260B	06/15/09 19:58 / abb

Report RL - Analyte reporting limit.

Definitions: QCL - Quality control limit.

J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060204-006
Client Sample ID: HL-0906-125

Report Date: 07/09/09
Collection Date: 06/11/09 13:45
DateReceived: 06/12/09
Matrix: Aqueous

Excerpt
Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Surr: Dibromofluoromethane	85.0	%REC		70-130		SW8260B	06/15/09 19:58 / abb
Surr: p-Bromofluorobenzene	112	%REC		70-130		SW8260B	06/15/09 19:58 / abb
Surr: Toluene-d8	117	%REC		70-130		SW8260B	06/15/09 19:58 / abb

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060204-007
Client Sample ID: Trip Blank 041309(ts)(b) 0243

Report Date: 07/09/09
Collection Date: 06/11/09 13:45
Date Received: 06/12/09
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	06/15/09 15:33 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	06/15/09 15:33 / abb
Benzene	ND	ug/L		1.0		SW8260B	06/15/09 15:33 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	06/15/09 15:33 / abb
Bromodichloromethane	ND	ug/L		1.0		SW8260B	06/15/09 15:33 / abb
Bromoform	ND	ug/L		1.0		SW8260B	06/15/09 15:33 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	06/15/09 15:33 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	06/15/09 15:33 / abb
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	06/15/09 15:33 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	06/15/09 15:33 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	06/15/09 15:33 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	06/15/09 15:33 / abb
Chloroform	0.29	ug/L	J	1.0		SW8260B	06/15/09 15:33 / abb
Chloromethane	ND	ug/L		1.0		SW8260B	06/15/09 15:33 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	06/15/09 15:33 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	06/15/09 15:33 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	06/15/09 15:33 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/15/09 15:33 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/15/09 15:33 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	06/15/09 15:33 / abb
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	06/15/09 15:33 / abb
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	06/15/09 15:33 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	06/15/09 15:33 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	06/15/09 15:33 / abb
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	06/15/09 15:33 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	06/15/09 15:33 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	06/15/09 15:33 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/15/09 15:33 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/15/09 15:33 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	06/15/09 15:33 / abb
2-Hexanone	ND	ug/L		20		SW8260B	06/15/09 15:33 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	06/15/09 15:33 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	06/15/09 15:33 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	06/15/09 15:33 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	06/15/09 15:33 / abb
Styrene	ND	ug/L		1.0		SW8260B	06/15/09 15:33 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/15/09 15:33 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/15/09 15:33 / abb
Tetrachloroethene	ND	ug/L		1.0		SW8260B	06/15/09 15:33 / abb
Toluene	ND	ug/L		1.0		SW8260B	06/15/09 15:33 / abb
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	06/15/09 15:33 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	06/15/09 15:33 / abb
Trichloroethene	ND	ug/L		1.0		SW8260B	06/15/09 15:33 / abb

Report RL - Analyte reporting limit.

Definitions: QCL - Quality control limit.

J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena
Lab ID: H09060204-007
Client Sample ID: Trip Blank 041309(ts)(b) 0243

Report Date: 07/09/09
Collection Date: 06/11/09 13:45
Date Received: 06/12/09
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	06/15/09 15:33 / abb
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	06/15/09 15:33 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	06/15/09 15:33 / abb
Vinyl chloride	ND	ug/L		1.0		SW8260B	06/15/09 15:33 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	06/15/09 15:33 / abb
o-Xylene	ND	ug/L		1.0		SW8260B	06/15/09 15:33 / abb
Xylenes, Total	ND	ug/L		1.0		SW8260B	06/15/09 15:33 / abb
Surr: 1,2-Dichloroethane-d4	93.0	%REC		70-130		SW8260B	06/15/09 15:33 / abb
Surr: Dibromofluoromethane	82.0	%REC		70-130		SW8260B	06/15/09 15:33 / abb
Surr: p-Bromofluorobenzene	108	%REC		70-130		SW8260B	06/15/09 15:33 / abb
Surr: Toluene-d8	118	%REC		70-130		SW8260B	06/15/09 15:33 / abb

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
 ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: Hydrometrics Inc-Helena

Report Date: 07/09/09

Project: 1273 City of Helena

Work Order: H09060204

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2510 B										Analytical Run: COND_090612A
Sample ID: CCV2_090612A	Continuing Calibration Verification Standard									06/12/09 17:01
Conductivity		719	umhos/cm	1.0	100	90	110			
Method: A2510 B										Batch: 090612A-COND-PROBE-W
Sample ID: LCS1_090612A	Laboratory Control Sample									Run: COND_090612A 06/12/09 16:28
Conductivity		1400	umhos/cm	1.0	99	90	110			
Sample ID: H09060204-001ADUP	Sample Duplicate									Run: COND_090612A 06/12/09 16:43
Conductivity		1450	umhos/cm	1.0				0.1	10	
Method: A4500-H B										Analytical Run: PH_090612B
Sample ID: CCV1_090612A	Continuing Calibration Verification Standard									06/12/09 17:34
pH		9.91	s.u.	0.10	99	99	101			
Sample ID: CCV2_090612A	Continuing Calibration Verification Standard									06/12/09 17:42
pH		9.92	s.u.	0.10	99	99	101			
Sample ID: CCV3_090612A	Continuing Calibration Verification Standard									06/12/09 17:52
pH		9.90	s.u.	0.10	99	99	101			
Method: A4500-H B										Batch: 090612A-PH-W
Sample ID: LCS1_090612A	Laboratory Control Sample									Run: PH_090612B 06/12/09 17:26
pH		6.93	s.u.	0.10	99	99	101			
Sample ID: H09060204-001ADUP	Sample Duplicate									Run: PH_090612B 06/12/09 17:42
pH		7.14	s.u.	0.10				0.1	2	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: Hydrometrics Inc-Helena

Report Date: 07/09/09

Project: 1273 City of Helena

Work Order: H09060204

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7								Analytical Run: SUB-B131361		
Sample ID: ICV 10 Continuing Calibration Verification Standard								06/17/09 12:27		
Barium		2.45	mg/L	0.10	98	95	105			
Beryllium		1.24	mg/L	0.010	99	95	105			
Chromium		2.48	mg/L	0.050	99	95	105			
Cobalt		2.50	mg/L	0.020	100	95	105			
Copper		2.50	mg/L	0.010	100	95	105			
Iron		2.61	mg/L	0.030	104	95	105			
Nickel		2.61	mg/L	0.050	104	95	105			
Silver		0.499	mg/L	0.010	100	95	105			
Vanadium		2.48	mg/L	0.10	99	95	105			
Zinc		2.52	mg/L	0.010	101	95	105			
Method: E200.7								Batch: B_R131361		
Sample ID: MB-SPDIS090617A 10 Method Blank								Run: SUB-B131361 06/17/09 11:52		
Barium		0.0003	mg/L	0.0001						
Beryllium		ND	mg/L	9E-05						
Chromium		ND	mg/L	0.002						
Cobalt		ND	mg/L	0.001						
Copper		ND	mg/L	0.0009						
Iron		ND	mg/L	0.002						
Nickel		ND	mg/L	0.002						
Silver		ND	mg/L	0.002						
Vanadium		ND	mg/L	0.003						
Zinc		0.002	mg/L	0.002						
Sample ID: LFB-SPDIS090617A 10 Laboratory Fortified Blank								Run: SUB-B131361 06/17/09 11:55		
Barium		0.993	mg/L	0.10	99	85	115			
Beryllium		0.496	mg/L	0.010	99	85	115			
Chromium		1.00	mg/L	0.050	100	85	115			
Cobalt		0.999	mg/L	0.020	100	85	115			
Copper		1.02	mg/L	0.010	102	85	115			
Iron		5.14	mg/L	0.030	103	85	115			
Nickel		1.04	mg/L	0.050	104	85	115			
Silver		0.490	mg/L	0.010	98	85	115			
Vanadium		0.982	mg/L	0.10	98	85	115			
Zinc		1.01	mg/L	0.010	101	85	115			
Sample ID: B09061485-012BMS2 10 Sample Matrix Spike								Run: SUB-B131361 06/17/09 22:05		
Barium		1.957	mg/L	0.10	98	70	130			
Beryllium		0.9673	mg/L	0.0022	97	70	130			
Chromium		2.002	mg/L	0.015	100	70	130			
Cobalt		1.971	mg/L	0.011	99	70	130			
Copper		2.006	mg/L	0.036	100	70	130			
Iron		10.34	mg/L	0.030	103	70	130			
Nickel		2.052	mg/L	0.012	103	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: Hydrometrics Inc-Helena

Report Date: 07/09/09

Project: 1273 City of Helena

Work Order: H09060204

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7								Batch: B_R131361		
Sample ID: B09061485-012BMS2	10	Sample Matrix Spike			Run: SUB-B131361			06/17/09 22:05		
Silver		0.7688	mg/L	0.0050	77	70	130			
Vanadium		1.947	mg/L	0.10	97	70	130			
Zinc		2.017	mg/L	0.010	101	70	130			
Sample ID: B09061485-012BMSD	10	Sample Matrix Spike Duplicate			Run: SUB-B131361			06/17/09 22:08		
Barium		1.986	mg/L	0.10	99	70	130	1.5	20	
Beryllium		0.9672	mg/L	0.0022	97	70	130	0	20	
Chromium		2.006	mg/L	0.015	100	70	130	0.2	20	
Cobalt		1.978	mg/L	0.011	99	70	130	0.3	20	
Copper		2.019	mg/L	0.036	101	70	130	0.6	20	
Iron		10.27	mg/L	0.030	103	70	130	0.7	20	
Nickel		2.050	mg/L	0.012	102	70	130	0.1	20	
Silver		0.7511	mg/L	0.0050	75	70	130	2.3	20	
Vanadium		1.938	mg/L	0.10	97	70	130	0.4	20	
Zinc		2.019	mg/L	0.010	101	70	130	0.1	20	
Sample ID: H09060204-004B	10	Sample Matrix Spike			Run: SUB-B131361			06/17/09 13:06		
Barium		1.00	mg/L	0.10	96	70	130			
Beryllium		0.486	mg/L	0.0010	97	70	130			
Chromium		1.00	mg/L	0.010	100	70	130			
Cobalt		0.991	mg/L	0.010	99	70	130			
Copper		1.02	mg/L	0.010	102	70	130			
Iron		5.05	mg/L	0.030	101	70	130			
Nickel		1.05	mg/L	0.010	105	70	130			
Silver		0.406	mg/L	0.0050	81	70	130			
Vanadium		0.971	mg/L	0.10	97	70	130			
Zinc		1.03	mg/L	0.010	103	70	130			
Sample ID: H09060204-004B	10	Sample Matrix Spike Duplicate			Run: SUB-B131361			06/17/09 13:16		
Barium		1.02	mg/L	0.10	98	70	130	1.8	20	
Beryllium		0.488	mg/L	0.0010	98	70	130	0.3	20	
Chromium		1.00	mg/L	0.010	100	70	130	0.1	20	
Cobalt		0.991	mg/L	0.010	99	70	130	0	20	
Copper		1.02	mg/L	0.010	102	70	130	0.1	20	
Iron		5.09	mg/L	0.030	102	70	130	0.8	20	
Nickel		1.04	mg/L	0.010	104	70	130	0.8	20	
Silver		0.392	mg/L	0.0050	78	70	130	3.5	20	
Vanadium		0.978	mg/L	0.10	98	70	130	0.7	20	
Zinc		1.03	mg/L	0.010	102	70	130	0.5	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: Hydrometrics Inc-Helena

Report Date: 07/09/09

Project: 1273 City of Helena

Work Order: H09060204

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8								Analytical Run: SUB-B131369		
Sample ID: QCS - 090602A,09040	9	Initial Calibration Verification Standard						06/17/09 10:41		
Antimony		0.048	mg/L	0.050	97	90	110			
Arsenic		0.049	mg/L	0.0050	98	90	110			
Cadmium		0.024	mg/L	0.0010	97	90	110			
Lead		0.049	mg/L	0.010	98	90	110			
Mercury		0.0020	mg/L	0.0010	98	90	110			
Nickel		0.048	mg/L	0.010	96	90	110			
Selenium		0.049	mg/L	0.0050	97	90	110			
Silver		0.025	mg/L	0.0050	101	90	110			
Thallium		0.050	mg/L	0.10	101	90	110			
Method: E200.8								Batch: B_R131369		
Sample ID: LRB	9	Method Blank				Run: SUB-B131369		06/17/09 12:58		
Antimony		ND	mg/L	5E-05						
Arsenic		ND	mg/L	3E-05						
Cadmium		ND	mg/L	1E-05						
Lead		ND	mg/L	8E-06						
Mercury		ND	mg/L	8E-06						
Nickel		ND	mg/L	5E-05						
Selenium		ND	mg/L	0.0002						
Silver		ND	mg/L	2E-05						
Thallium		ND	mg/L	8E-06						
Sample ID: LFB	9	Laboratory Fortified Blank				Run: SUB-B131369		06/17/09 13:02		
Antimony		0.049	mg/L	0.050	97	85	115			
Arsenic		0.049	mg/L	0.0050	98	85	115			
Cadmium		0.049	mg/L	0.0010	98	85	115			
Lead		0.050	mg/L	0.010	99	85	115			
Mercury		0.0010	mg/L	0.0010	100	85	115			
Nickel		0.049	mg/L	0.010	97	85	115			
Selenium		0.049	mg/L	0.0050	98	85	115			
Silver		0.019	mg/L	0.0050	96	85	115			
Thallium		0.050	mg/L	0.10	100	85	115			
Sample ID: H09060187-019C	9	Sample Matrix Spike				Run: SUB-B131369		06/17/09 22:52		
Antimony		0.0487	mg/L	0.0050	96	70	130			
Arsenic		0.0537	mg/L	0.0050	99	70	130			
Cadmium		0.0506	mg/L	0.0010	101	70	130			
Lead		0.0488	mg/L	0.010	97	70	130			
Mercury		0.00103	mg/L	0.0010	103	70	130			
Nickel		0.0504	mg/L	0.010	99	70	130			
Selenium		0.0512	mg/L	0.0050	102	70	130			
Silver		0.0185	mg/L	0.0050	92	70	130			
Thallium		0.0483	mg/L	0.0050	97	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena

Report Date: 07/09/09
Work Order: H09060204

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8										Batch: B_R131369
Sample ID: H09060187-019C	9	Sample Matrix Spike Duplicate			Run: SUB-B131369			06/17/09 22:56		
Antimony		0.0489	mg/L	0.0050	97	70	130	0.4	20	
Arsenic		0.0537	mg/L	0.0050	99	70	130	0.1	20	
Cadmium		0.0503	mg/L	0.0010	100	70	130	0.6	20	
Lead		0.0494	mg/L	0.010	98	70	130	1.2	20	
Mercury		0.00105	mg/L	0.0010	105	70	130	1.7	20	
Nickel		0.0506	mg/L	0.010	100	70	130	0.3	20	
Selenium		0.0509	mg/L	0.0050	102	70	130	0.5	20	
Silver		0.0192	mg/L	0.0050	96	70	130	3.7	20	
Thallium		0.0488	mg/L	0.0050	98	70	130	1	20	
Sample ID: H09060204-006B	9	Sample Matrix Spike			Run: SUB-B131369			06/18/09 04:05		
Antimony		0.0511	mg/L	0.0050	102	70	130			
Arsenic		0.0516	mg/L	0.0050	103	70	130			
Cadmium		0.0528	mg/L	0.0010	104	70	130			
Lead		0.0508	mg/L	0.010	102	70	130			
Mercury		0.00102	mg/L	0.0010	101	70	130			
Nickel		0.0505	mg/L	0.010	101	70	130			
Selenium		0.0553	mg/L	0.0050	106	70	130			
Silver		0.0166	mg/L	0.0050	83	70	130			
Thallium		0.0505	mg/L	0.0050	101	70	130			
Sample ID: H09060204-006B	9	Sample Matrix Spike Duplicate			Run: SUB-B131369			06/18/09 04:09		
Antimony		0.0500	mg/L	0.0050	100	70	130	2.2	20	
Arsenic		0.0502	mg/L	0.0050	100	70	130	2.9	20	
Cadmium		0.0516	mg/L	0.0010	101	70	130	2.4	20	
Lead		0.0500	mg/L	0.010	100	70	130	1.7	20	
Mercury		0.00102	mg/L	0.0010	101	70	130	0.1	20	
Nickel		0.0492	mg/L	0.010	98	70	130	2.7	20	
Selenium		0.0536	mg/L	0.0050	102	70	130	3	20	
Silver		0.0174	mg/L	0.0050	87	70	130	4.4	20	
Thallium		0.0495	mg/L	0.0050	99	70	130	2.1	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: Hydrometrics Inc-Helena

Report Date: 07/09/09

Project: 1273 City of Helena

Work Order: H09060204

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E300.0								Analytical Run: IC101-H_090616A		
Sample ID: ICV	2	Initial Calibration Verification Standard								06/16/09 15:40
Chloride		2.5	mg/L	1.0	100	90	110			
Sulfate		9.7	mg/L	1.0	97	90	110			
Sample ID: CCV	2	Continuing Calibration Verification Standard								06/18/09 07:37
Chloride		25	mg/L	1.0	101	90	110			
Sulfate		51	mg/L	1.0	102	90	110			
Sample ID: CCV	2	Continuing Calibration Verification Standard								06/18/09 11:27
Chloride		25	mg/L	1.0	101	90	110			
Sulfate		50	mg/L	1.0	101	90	110			
Method: E300.0								Batch: R54350		
Sample ID: LCS	2	Laboratory Control Sample				Run: IC101-H_090616A			06/16/09 15:56	
Chloride		92	mg/L	1.0	106	90	110			
Sulfate		27	mg/L	1.0	95	90	110			
Sample ID: LFB	2	Laboratory Fortified Blank				Run: IC101-H_090616A			06/16/09 16:12	
Chloride		5.2	mg/L	1.0	103	90	110			
Sulfate		9.7	mg/L	1.0	93	90	110			
Sample ID: MBLK	2	Method Blank				Run: IC101-H_090616A			06/16/09 16:29	
Chloride		ND	mg/L	0.05						
Sulfate		0.5	mg/L	0.1						
Sample ID: H09060179-004A MS	2	Sample Matrix Spike				Run: IC101-H_090616A			06/18/09 08:26	
Chloride		29	mg/L	1.0	104	90	110			
Sulfate		69	mg/L	1.0	104	90	110			
Sample ID: H09060179-004A MSD	2	Sample Matrix Spike Duplicate				Run: IC101-H_090616A			06/18/09 08:43	
Chloride		29	mg/L	1.0	103	90	110	0.7	20	
Sulfate		69	mg/L	1.0	102	90	110	1	20	
Sample ID: H09060204-006A MS	2	Sample Matrix Spike				Run: IC101-H_090616A			06/18/09 12:49	
Chloride		25	mg/L	1.0	100	90	110			
Sulfate		50	mg/L	1.0	100	90	110			
Sample ID: H09060204-006A MSD	2	Sample Matrix Spike Duplicate				Run: IC101-H_090616A			06/18/09 13:06	
Chloride		25	mg/L	1.0	100	90	110	0.6	20	
Sulfate		51	mg/L	1.0	102	90	110	1.1	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: Hydrometrics Inc-Helena

Report Date: 07/09/09

Project: 1273 City of Helena

Work Order: H09060204

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E353.2							Analytical Run: NUTRIENTS_090615C			
Sample ID: ICV-1	Initial Calibration Verification Standard									06/15/09 11:48
Nitrogen, Nitrate+Nitrite as N		1.020	mg/L	0.050	102	90	110			
Sample ID: CCV-21							Continuing Calibration Verification Standard			06/15/09 12:28
Nitrogen, Nitrate+Nitrite as N		0.5300	mg/L	0.050	106	90	110			
Method: E353.2							Batch: A2009-06-15_5_NO3_01			
Sample ID: LCS-2	Laboratory Control Sample				Run: NUTRIENTS_090615C				06/15/09 11:50	
Nitrogen, Nitrate+Nitrite as N		16.00	mg/L	0.095	105	90	110			
Sample ID: LFB-3				Laboratory Fortified Blank				Run: NUTRIENTS_090615C		06/15/09 11:52
Nitrogen, Nitrate+Nitrite as N		0.5400	mg/L	0.050	108	90	110			
Sample ID: MBLK-7				Method Blank				Run: NUTRIENTS_090615C		06/15/09 12:00
Nitrogen, Nitrate+Nitrite as N		ND	mg/L	0.010						
Sample ID: H09060199-006BMS				Sample Matrix Spike				Run: NUTRIENTS_090615C		06/15/09 12:32
Nitrogen, Nitrate+Nitrite as N		1.08	mg/L	0.050	108	90	110			
Sample ID: H09060199-006BMSD				Sample Matrix Spike Duplicate				Run: NUTRIENTS_090615C		06/15/09 12:34
Nitrogen, Nitrate+Nitrite as N		1.10	mg/L	0.050	110	90	110	1.8	20	
Sample ID: H09060205-002AMS				Sample Matrix Spike				Run: NUTRIENTS_090615C		06/15/09 12:58
Nitrogen, Nitrate+Nitrite as N		1.48	mg/L	0.050	108	90	110			
Sample ID: H09060205-002AMSD				Sample Matrix Spike Duplicate				Run: NUTRIENTS_090615C		06/15/09 13:00
Nitrogen, Nitrate+Nitrite as N		1.50	mg/L	0.050	110	90	110	1.3	20	
Method: E410.4							Analytical Run: SPECTRO_090612A			
Sample ID: CCV	Continuing Calibration Verification Standard									06/12/09 15:00
Oxygen Demand, Chemical (COD)		49	mg/L	1.0	98	90	110			
Method: E410.4							Batch: R54236			
Sample ID: LCS	Laboratory Control Sample				Run: SPECTRO_090612A				06/12/09 15:00	
Oxygen Demand, Chemical (COD)		310	mg/L	4.7	105	90	110			
Sample ID: MBLK				Method Blank				Run: SPECTRO_090612A		06/12/09 15:00
Oxygen Demand, Chemical (COD)		ND	mg/L	0.9						
Sample ID: H09060204-004CMS				Sample Matrix Spike				Run: SPECTRO_090612A		06/12/09 15:00
Oxygen Demand, Chemical (COD)		48	mg/L	1.0	97	90	110			
Sample ID: H09060204-004CMSD				Sample Matrix Spike Duplicate				Run: SPECTRO_090612A		06/12/09 15:00
Oxygen Demand, Chemical (COD)		49	mg/L	1.0	97	90	110	0.6	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: Hydrometrics Inc-Helena

Report Date: 07/09/09

Project: 1273 City of Helena

Work Order: H09060204

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: Kelada mod										Batch: B_39659
Sample ID: LCS-39659		Laboratory Control Sample				Run: SUB-B131671				06/23/09 10:51
Cyanide, Total		0.0993	mg/L	0.0050	99	90	110			
Sample ID: MB-39659										06/23/09 10:55
Sample ID: MB-39659		Method Blank				Run: SUB-B131671				06/23/09 10:55
Cyanide, Total		ND	mg/L	0.003						
Sample ID: B09061941-008DMS										06/23/09 11:13
Sample ID: B09061941-008DMS		Sample Matrix Spike				Run: SUB-B131671				06/23/09 11:13
Cyanide, Total		0.162	mg/L	0.0050	97	90	110			
Sample ID: B09061941-008DMSD										06/23/09 11:15
Sample ID: B09061941-008DMSD		Sample Matrix Spike Duplicate				Run: SUB-B131671				06/23/09 11:15
Cyanide, Total		0.180	mg/L	0.0050	115	90	110	10	10	SR
Method: Kelada mod										Analytical Run: SUB-B131241
Sample ID: ICV-1										06/16/09 13:38
Initial Calibration Verification Standard										06/16/09 13:38
Cyanide, Total		0.148	mg/L	0.0050	99	90	110			
Method: Kelada mod										Batch: B_R131241
Sample ID: LFB-2										06/16/09 13:39
Laboratory Fortified Blank										06/16/09 13:39
Cyanide, Total		0.110	mg/L	0.0050	110	90	110			
Sample ID: MBLK-3										06/16/09 13:41
Method Blank										06/16/09 13:41
Cyanide, Total		ND	mg/L	0.003						
Sample ID: H09060201-009B										06/16/09 14:51
Sample Matrix Spike										06/16/09 14:51
Cyanide, Total		0.283	mg/L	0.0050	91	90	110			
Sample ID: H09060201-009B										06/16/09 14:53
Sample Matrix Spike Duplicate										06/16/09 14:53
Cyanide, Total		0.283	mg/L	0.0050	91	90	110	0.1	10	
Method: Kelada mod										Analytical Run: SUB-B131671
Sample ID: ICV-1										06/23/09 10:33
Initial Calibration Verification Standard										06/23/09 10:33
Cyanide, Total		0.146	mg/L	0.0050	97	90	110			

Qualifiers:

RL - Analyte reporting limit.

R - RPD exceeds advisory limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena

Report Date: 07/09/09
Work Order: H09060204

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B								Analytical Run: 1SATURN_090615A		
Sample ID: CCV061509A	54 Continuing Calibration Verification Standard								06/15/09 12:43	
Acetone		44.0	ug/L	20	88	70	130			
Acrylonitrile		47.2	ug/L	20	94	70	130			
Benzene		4.48	ug/L	1.0	90	70	130			
Bromochloromethane		4.96	ug/L	1.0	99	70	130			
Bromodichloromethane		5.00	ug/L	1.0	100	70	130			
Bromoform		4.96	ug/L	1.0	99	70	130			
Bromomethane		4.52	ug/L	1.0	90	70	130			
Carbon disulfide		4.56	ug/L	1.0	91	70	130			
Carbon tetrachloride		4.60	ug/L	1.0	92	70	130			
Chlorobenzene		5.32	ug/L	1.0	106	70	130			
Chlorodibromomethane		4.88	ug/L	1.0	98	70	130			
Chloroethane		4.32	ug/L	1.0	86	70	130			
Chloroform		4.56	ug/L	1.0	91	80	120			
Chloromethane		4.52	ug/L	1.0	90	70	130			
1,2-Dibromo-3-chloropropane		4.80	ug/L	1.0	96	70	130			
1,2-Dibromoethane		4.48	ug/L	1.0	90	70	130			
Dibromomethane		5.00	ug/L	1.0	100	70	130			
1,2-Dichlorobenzene		5.20	ug/L	1.0	104	70	130			
1,4-Dichlorobenzene		5.48	ug/L	1.0	110	70	130			
trans-1,4-Dichloro-2-butene		5.40	ug/L	1.0	108	70	130			
Dichlorodifluoromethane		4.64	ug/L	1.0	93	70	130			
1,1-Dichloroethane		4.48	ug/L	1.0	90	70	130			
1,2-Dichloroethane		4.16	ug/L	1.0	83	70	130			
1,1-Dichloroethene		4.24	ug/L	1.0	85	80	120			
cis-1,2-Dichloroethene		4.76	ug/L	1.0	95	70	130			
trans-1,2-Dichloroethene		4.48	ug/L	1.0	90	70	130			
1,2-Dichloropropane		4.80	ug/L	1.0	96	80	120			
cis-1,3-Dichloropropene		5.28	ug/L	1.0	106	70	130			
trans-1,3-Dichloropropene		5.28	ug/L	1.0	106	70	130			
Ethylbenzene		5.32	ug/L	1.0	106	80	120			
2-Hexanone		48.0	ug/L	20	96	70	130			
Iodomethane		4.84	ug/L	1.0	97	70	130			
Methyl ethyl ketone		46.0	ug/L	20	92	70	130			
Methyl isobutyl ketone		46.4	ug/L	20	93	70	130			
Methylene chloride		4.20	ug/L	1.0	84	70	130			
Styrene		4.92	ug/L	1.0	98	70	130			
1,1,1,2-Tetrachloroethane		4.72	ug/L	1.0	94	70	130			
1,1,2,2-Tetrachloroethane		5.16	ug/L	1.0	103	70	130			
Tetrachloroethene		5.44	ug/L	1.0	109	70	130			
Toluene		4.88	ug/L	1.0	98	80	120			
1,1,1-Trichloroethane		4.72	ug/L	1.0	94	70	130			
1,1,2-Trichloroethane		5.28	ug/L	1.0	106	70	130			
Trichloroethene		4.76	ug/L	1.0	95	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena

Report Date: 07/09/09
Work Order: H09060204

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B				Analytical Run: 1SATURN_090615A						
Sample ID: CCV061509A				54 Continuing Calibration Verification Standard						06/15/09 12:43
Trichlorofluoromethane		5.00	ug/L	1.0	100	70	130			
1,2,3-Trichloropropane		4.84	ug/L	1.0	97	70	130			
Vinyl acetate		4.52	ug/L	1.0	90	70	130			
Vinyl chloride		4.40	ug/L	1.0	88	80	120			
m+p-Xylenes		9.88	ug/L	1.0	99	70	130			
o-Xylene		5.20	ug/L	1.0	104	70	130			
Xylenes, Total		15.1	ug/L	1.0	101	70	130			
Surr: 1,2-Dichloroethane-d4				1.0	94	70	130			
Surr: Dibromofluoromethane				1.0	85	70	130			
Surr: p-Bromofluorobenzene				1.0	112	70	130			
Surr: Toluene-d8				1.0	106	70	130			

Method: SW8260B				Batch: R54267						
Sample ID: LCS061509A				54 Laboratory Control Sample						06/15/09 13:45
				Run: 1SATURN_090615A						
Acetone		47.6	ug/L	20	95	70	130			
Acrylonitrile		52.0	ug/L	20	104	70	130			
Benzene		5.04	ug/L	1.0	101	70	130			
Bromochloromethane		5.52	ug/L	1.0	110	70	130			
Bromodichloromethane		5.56	ug/L	1.0	111	70	130			
Bromoform		5.00	ug/L	1.0	100	70	130			
Bromomethane		4.48	ug/L	1.0	90	70	130			
Carbon disulfide		5.44	ug/L	1.0	109	70	130			
Carbon tetrachloride		5.32	ug/L	1.0	106	70	130			
Chlorobenzene		5.76	ug/L	1.0	115	70	130			
Chlorodibromomethane		5.88	ug/L	1.0	118	70	130			
Chloroethane		4.48	ug/L	1.0	90	70	130			
Chloroform		5.08	ug/L	1.0	102	70	130			
Chloromethane		4.20	ug/L	1.0	84	70	130			
1,2-Dibromo-3-chloropropane		4.68	ug/L	1.0	94	70	130			
1,2-Dibromoethane		5.44	ug/L	1.0	109	70	130			
Dibromomethane		5.56	ug/L	1.0	111	70	130			
1,2-Dichlorobenzene		5.44	ug/L	1.0	109	70	130			
1,4-Dichlorobenzene		5.60	ug/L	1.0	112	70	130			
trans-1,4-Dichloro-2-butene		5.60	ug/L	1.0	112	70	130			
Dichlorodifluoromethane		3.48	ug/L	1.0	70	70	130			
1,1-Dichloroethane		5.12	ug/L	1.0	102	70	130			
1,2-Dichloroethane		4.80	ug/L	1.0	96	70	130			
1,1-Dichloroethene		5.12	ug/L	1.0	102	70	130			
cis-1,2-Dichloroethene		5.16	ug/L	1.0	103	70	130			
trans-1,2-Dichloroethene		5.44	ug/L	1.0	109	70	130			
1,2-Dichloropropane		5.32	ug/L	1.0	106	70	130			
cis-1,3-Dichloropropene		5.88	ug/L	1.0	118	70	130			
trans-1,3-Dichloropropene		6.16	ug/L	1.0	123	70	130			
Ethylbenzene		6.04	ug/L	1.0	121	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena

Report Date: 07/09/09
Work Order: H09060204

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R54267
Sample ID: LCS061509A	54 Laboratory Control Sample				Run: 1SATURN_090615A				06/15/09 13:45	
2-Hexanone		52.4	ug/L	20	105	70	130			
Iodomethane		5.72	ug/L	1.0	114	70	130			
Methyl ethyl ketone		48.8	ug/L	20	98	70	130			
Methyl isobutyl ketone		48.8	ug/L	20	98	70	130			
Methylene chloride		5.08	ug/L	1.0	102	70	130			
Styrene		5.60	ug/L	1.0	112	70	130			
1,1,1,2-Tetrachloroethane		5.56	ug/L	1.0	111	70	130			
1,1,2,2-Tetrachloroethane		5.12	ug/L	1.0	102	70	130			
Tetrachloroethene		6.28	ug/L	1.0	126	70	130			
Toluene		5.64	ug/L	1.0	113	70	130			
1,1,1-Trichloroethane		5.36	ug/L	1.0	107	70	130			
1,1,2-Trichloroethane		5.68	ug/L	1.0	114	70	130			
Trichloroethene		5.84	ug/L	1.0	117	70	130			
Trichlorofluoromethane		4.92	ug/L	1.0	98	70	130			
1,2,3-Trichloropropane		4.76	ug/L	1.0	95	70	130			
Vinyl acetate		4.64	ug/L	1.0	93	70	130			
Vinyl chloride		4.60	ug/L	1.0	92	70	130			
m+p-Xylenes		11.8	ug/L	1.0	118	70	130			
o-Xylene		6.12	ug/L	1.0	122	70	130			
Xylenes, Total		17.9	ug/L	1.0	119	70	130			
Surr: 1,2-Dichloroethane-d4				1.0	98	70	130			
Surr: Dibromofluoromethane				1.0	91	70	130			
Surr: p-Bromofluorobenzene				1.0	108	70	130			
Surr: Toluene-d8				1.0	113	70	130			
Sample ID: MB061509A	54 Method Blank				Run: 1SATURN_090615A				06/15/09 14:48	
Acetone		ND	ug/L	20						
Acrylonitrile		ND	ug/L	20						
Benzene		ND	ug/L	1.0						
Bromochloromethane		ND	ug/L	1.0						
Bromodichloromethane		ND	ug/L	1.0						
Bromoform		ND	ug/L	1.0						
Bromomethane		ND	ug/L	1.0						
Carbon disulfide		ND	ug/L	1.0						
Carbon tetrachloride		ND	ug/L	1.0						
Chlorobenzene		ND	ug/L	1.0						
Chlorodibromomethane		ND	ug/L	1.0						
Chloroethane		ND	ug/L	1.0						
Chloroform		ND	ug/L	1.0						
Chloromethane		ND	ug/L	1.0						
1,2-Dibromo-3-chloropropane		ND	ug/L	1.0						
1,2-Dibromoethane		ND	ug/L	1.0						
Dibromomethane		ND	ug/L	1.0						
1,2-Dichlorobenzene		ND	ug/L	1.0						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: Hydrometrics Inc-Helena

Report Date: 07/09/09

Project: 1273 City of Helena

Work Order: H09060204

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R54267
Sample ID: MB061509A	54	Method Blank				Run: 1SATURN_090615A			06/15/09 14:48	
1,4-Dichlorobenzene		ND	ug/L	1.0						
trans-1,4-Dichloro-2-butene		ND	ug/L	1.0						
Dichlorodifluoromethane		ND	ug/L	1.0						
1,1-Dichloroethane		ND	ug/L	1.0						
1,2-Dichloroethane		ND	ug/L	1.0						
1,1-Dichloroethene		ND	ug/L	1.0						
cis-1,2-Dichloroethene		ND	ug/L	1.0						
trans-1,2-Dichloroethene		ND	ug/L	1.0						
1,2-Dichloropropane		ND	ug/L	1.0						
cis-1,3-Dichloropropene		ND	ug/L	1.0						
trans-1,3-Dichloropropene		ND	ug/L	1.0						
Ethylbenzene		ND	ug/L	1.0						
2-Hexanone		ND	ug/L	20						
Iodomethane		ND	ug/L	1.0						
Methyl ethyl ketone		ND	ug/L	20						
Methyl isobutyl ketone		ND	ug/L	20						
Methylene chloride		ND	ug/L	1.0						
Styrene		ND	ug/L	1.0						
1,1,1,2-Tetrachloroethane		ND	ug/L	1.0						
1,1,2,2-Tetrachloroethane		ND	ug/L	1.0						
Tetrachloroethene		ND	ug/L	1.0						
Toluene		ND	ug/L	1.0						
1,1,1-Trichloroethane		ND	ug/L	1.0						
1,1,2-Trichloroethane		ND	ug/L	1.0						
Trichloroethene		ND	ug/L	1.0						
Trichlorofluoromethane		ND	ug/L	1.0						
1,2,3-Trichloropropane		ND	ug/L	1.0						
Vinyl acetate		ND	ug/L	1.0						
Vinyl chloride		ND	ug/L	1.0						
m+p-Xylenes		ND	ug/L	1.0						
o-Xylene		ND	ug/L	1.0						
Xylenes, Total		ND	ug/L	1.0						
Surr: 1,2-Dichloroethane-d4				1.0	99	70	130			
Surr: Dibromofluoromethane				1.0	89	70	130			
Surr: p-Bromofluorobenzene				1.0	110	70	130			
Surr: Toluene-d8				1.0	109	70	130			
Sample ID: H09060177-013AMS	54	Sample Matrix Spike				Run: 1SATURN_090615A			06/15/09 20:57	
Acetone		94.4	ug/L	40	94	70	130			
Acrylonitrile		96.8	ug/L	40	97	70	130			
Benzene		8.16	ug/L	2.0	82	70	130			
Bromochloromethane		10.5	ug/L	2.0	105	70	130			
Bromodichloromethane		11.0	ug/L	2.0	110	70	130			
Bromoform		10.2	ug/L	2.0	102	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: Hydrometrics Inc-Helena

Report Date: 07/09/09

Project: 1273 City of Helena

Work Order: H09060204

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R54267
Sample ID: H09060177-013AMS	54	Sample Matrix Spike				Run: 1SATURN_090615A				06/15/09 20:57
Bromomethane		9.12	ug/L	2.0	91	70	130			
Carbon disulfide		9.04	ug/L	2.0	90	70	130			
Carbon tetrachloride		8.40	ug/L	2.0	84	70	130			
Chlorobenzene		11.4	ug/L	2.0	114	70	130			
Chlorodibromomethane		11.0	ug/L	2.0	110	70	130			
Chloroethane		8.00	ug/L	2.0	80	70	130			
Chloroform		9.44	ug/L	2.0	94	70	130			
Chloromethane		10.2	ug/L	2.0	102	70	130			
1,2-Dibromo-3-chloropropane		9.84	ug/L	2.0	98	70	130			
1,2-Dibromoethane		9.76	ug/L	2.0	98	70	130			
Dibromomethane		11.0	ug/L	2.0	110	70	130			
1,2-Dichlorobenzene		11.1	ug/L	2.0	111	70	130			
1,4-Dichlorobenzene		10.9	ug/L	2.0	109	70	130			
trans-1,4-Dichloro-2-butene		9.68	ug/L	2.0	97	70	130			
Dichlorodifluoromethane		9.44	ug/L	2.0	94	70	130			
1,1-Dichloroethane		9.12	ug/L	2.0	91	70	130			
1,2-Dichloroethane		8.56	ug/L	2.0	86	70	130			
1,1-Dichloroethene		8.56	ug/L	2.0	86	70	130			
cis-1,2-Dichloroethene		9.04	ug/L	2.0	90	70	130			
trans-1,2-Dichloroethene		9.20	ug/L	2.0	92	70	130			
1,2-Dichloropropane		10.0	ug/L	2.0	100	70	130			
cis-1,3-Dichloropropene		11.0	ug/L	2.0	110	70	130			
trans-1,3-Dichloropropene		11.4	ug/L	2.0	114	70	130			
Ethylbenzene		11.4	ug/L	2.0	114	70	130			
2-Hexanone		106	ug/L	40	106	70	130			
Iodomethane		9.12	ug/L	2.0	91	70	130			
Methyl ethyl ketone		96.8	ug/L	40	97	70	130			
Methyl isobutyl ketone		99.2	ug/L	40	99	70	130			
Methylene chloride		8.96	ug/L	2.0	90	70	130			
Styrene		10.7	ug/L	2.0	107	70	130			
1,1,1,2-Tetrachloroethane		11.3	ug/L	2.0	113	70	130			
1,1,2,2-Tetrachloroethane		10.6	ug/L	2.0	106	70	130			
Tetrachloroethene		11.7	ug/L	2.0	117	70	130			
Toluene		11.0	ug/L	2.0	110	70	130			
1,1,1-Trichloroethane		13.8	ug/L	2.0	94	70	130			
1,1,2-Trichloroethane		12.2	ug/L	2.0	122	70	130			
Trichloroethene		10.4	ug/L	2.0	104	70	130			
Trichlorofluoromethane		9.76	ug/L	2.0	98	70	130			
1,2,3-Trichloropropane		9.84	ug/L	2.0	98	70	130			
Vinyl acetate		8.88	ug/L	2.0	89	70	130			
Vinyl chloride		9.04	ug/L	2.0	90	70	130			
m+p-Xylenes		21.1	ug/L	2.0	106	70	130			
o-Xylene		11.0	ug/L	2.0	110	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: Hydrometrics Inc-Helena

Report Date: 07/09/09

Project: 1273 City of Helena

Work Order: H09060204

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R54267
Sample ID: H09060177-013AMS	54	Sample Matrix Spike			Run: 1SATURN_090615A				06/15/09 20:57	
Xylenes, Total		32.2	ug/L	2.0	107	70	130			
Surr: 1,2-Dichloroethane-d4				2.0	101	70	130			
Surr: Dibromofluoromethane				2.0	86	70	130			
Surr: p-Bromofluorobenzene				2.0	114	70	130			
Surr: Toluene-d8				2.0	113	70	130			
Sample ID: H09060177-013AMSD	54	Sample Matrix Spike Duplicate			Run: 1SATURN_090615A				06/15/09 21:27	
Acetone		88.0	ug/L	40	88	70	130	7	20	
Acrylonitrile		96.0	ug/L	40	96	70	130	0.8	20	
Benzene		7.94	ug/L	2.0	79	70	130	2.7	20	
Bromochloromethane		9.68	ug/L	2.0	97	70	130	7.9	20	
Bromodichloromethane		11.0	ug/L	2.0	110	70	130	0	20	
Bromoform		11.3	ug/L	2.0	113	70	130	10	20	
Bromomethane		10.5	ug/L	2.0	105	70	130	14	20	
Carbon disulfide		9.84	ug/L	2.0	98	70	130	8.5	20	
Carbon tetrachloride		8.56	ug/L	2.0	86	70	130	1.9	20	
Chlorobenzene		11.4	ug/L	2.0	114	70	130	0.7	20	
Chlorodibromomethane		11.2	ug/L	2.0	112	70	130	1.4	20	
Chloroethane		8.80	ug/L	2.0	88	70	130	9.5	20	
Chloroform		9.12	ug/L	2.0	91	70	130	3.4	20	
Chloromethane		10.0	ug/L	2.0	100	70	130	2.4	20	
1,2-Dibromo-3-chloropropane		10.7	ug/L	2.0	107	70	130	8.6	20	
1,2-Dibromoethane		10.0	ug/L	2.0	100	70	130	2.4	20	
Dibromomethane		11.0	ug/L	2.0	110	70	130	0.7	20	
1,2-Dichlorobenzene		11.5	ug/L	2.0	115	70	130	3.5	20	
1,4-Dichlorobenzene		11.8	ug/L	2.0	118	70	130	7.8	20	
trans-1,4-Dichloro-2-butene		10.5	ug/L	2.0	105	70	130	7.9	20	
Dichlorodifluoromethane		10.4	ug/L	2.0	104	70	130	9.7	20	
1,1-Dichloroethane		9.04	ug/L	2.0	90	70	130	0.9	20	
1,2-Dichloroethane		8.64	ug/L	2.0	86	70	130	0.9	20	
1,1-Dichloroethene		8.64	ug/L	2.0	86	70	130	0.9	20	
cis-1,2-Dichloroethene		9.12	ug/L	2.0	91	70	130	0.9	20	
trans-1,2-Dichloroethene		9.20	ug/L	2.0	92	70	130	0	20	
1,2-Dichloropropane		9.92	ug/L	2.0	99	70	130	0.8	20	
cis-1,3-Dichloropropene		10.8	ug/L	2.0	108	70	130	1.5	20	
trans-1,3-Dichloropropene		11.4	ug/L	2.0	114	70	130	0.7	20	
Ethylbenzene		11.7	ug/L	2.0	117	70	130	2.8	20	
2-Hexanone		102	ug/L	40	102	70	130	3.8	20	
Iodomethane		9.76	ug/L	2.0	98	70	130	6.8	20	
Methyl ethyl ketone		86.4	ug/L	40	86	70	130	11	20	
Methyl isobutyl ketone		98.4	ug/L	40	98	70	130	0.8	20	
Methylene chloride		9.12	ug/L	2.0	91	70	130	1.8	20	
Styrene		10.9	ug/L	2.0	109	70	130	1.5	20	
1,1,1,2-Tetrachloroethane		11.6	ug/L	2.0	116	70	130	2.8	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: Hydrometrics Inc-Helena

Report Date: 07/09/09

Project: 1273 City of Helena

Work Order: H09060204

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R54267
Sample ID: H09060177-013AMSD 54 Sample Matrix Spike Duplicate										Run: 1SATURN_090615A 06/15/09 21:27
1,1,2,2-Tetrachloroethane		11.3	ug/L	2.0	113	70	130	5.8	20	
Tetrachloroethene		12.0	ug/L	2.0	120	70	130	2.7	20	
Toluene		10.7	ug/L	2.0	107	70	130	2.2	20	
1,1,1-Trichloroethane		13.3	ug/L	2.0	89	70	130	4.1	20	
1,1,2-Trichloroethane		11.3	ug/L	2.0	113	70	130	8.2	20	
Trichloroethene		11.2	ug/L	2.0	112	70	130	7.4	20	
Trichlorofluoromethane		10.8	ug/L	2.0	108	70	130	10	20	
1,2,3-Trichloropropane		9.20	ug/L	2.0	92	70	130	6.7	20	
Vinyl acetate		8.56	ug/L	2.0	86	70	130	3.7	20	
Vinyl chloride		10.3	ug/L	2.0	103	70	130	13	20	
m+p-Xylenes		22.6	ug/L	2.0	113	70	130	6.9	20	
o-Xylene		11.6	ug/L	2.0	116	70	130	4.9	20	
Xylenes, Total		34.2	ug/L	2.0	114	70	130	6.3	20	
Surr: 1,2-Dichloroethane-d4				2.0	94	70	130	0	20	
Surr: Dibromofluoromethane				2.0	83	70	130	0	20	
Surr: p-Bromofluorobenzene				2.0	126	70	130	0	20	
Surr: Toluene-d8				2.0	110	70	130	0	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: Hydrometrics Inc-Helena

Report Date: 07/09/09

Project: 1273 City of Helena

Work Order: H09060204

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B								Analytical Run: 1SATURN_090618B		
Sample ID: CCV061809A		54 Continuing Calibration Verification Standard							06/18/09 09:34	
Acetone		45.6	ug/L	20	91	70	130			
Acrylonitrile		52.4	ug/L	20	105	70	130			
Benzene		4.64	ug/L	1.0	93	70	130			
Bromochloromethane		4.84	ug/L	1.0	97	70	130			
Bromodichloromethane		5.40	ug/L	1.0	108	70	130			
Bromoform		5.04	ug/L	1.0	101	70	130			
Bromomethane		4.52	ug/L	1.0	90	70	130			
Carbon disulfide		5.16	ug/L	1.0	103	70	130			
Carbon tetrachloride		4.52	ug/L	1.0	90	70	130			
Chlorobenzene		5.40	ug/L	1.0	108	70	130			
Chlorodibromomethane		5.64	ug/L	1.0	113	70	130			
Chloroethane		4.80	ug/L	1.0	96	70	130			
Chloroform		4.80	ug/L	1.0	96	80	120			
Chloromethane		5.20	ug/L	1.0	104	70	130			
1,2-Dibromo-3-chloropropane		5.16	ug/L	1.0	103	70	130			
1,2-Dibromoethane		5.12	ug/L	1.0	102	70	130			
Dibromomethane		5.24	ug/L	1.0	105	70	130			
1,2-Dichlorobenzene		5.84	ug/L	1.0	117	70	130			
1,4-Dichlorobenzene		5.92	ug/L	1.0	118	70	130			
trans-1,4-Dichloro-2-butene		5.64	ug/L	1.0	113	70	130			
Dichlorodifluoromethane		5.44	ug/L	1.0	109	70	130			
1,1-Dichloroethane		4.68	ug/L	1.0	94	70	130			
1,2-Dichloroethane		4.32	ug/L	1.0	86	70	130			
1,1-Dichloroethene		4.44	ug/L	1.0	89	80	120			
cis-1,2-Dichloroethene		4.48	ug/L	1.0	90	70	130			
trans-1,2-Dichloroethene		4.64	ug/L	1.0	93	70	130			
1,2-Dichloropropane		5.28	ug/L	1.0	106	80	120			
cis-1,3-Dichloropropene		5.80	ug/L	1.0	116	70	130			
trans-1,3-Dichloropropene		5.92	ug/L	1.0	118	70	130			
Ethylbenzene		5.88	ug/L	1.0	118	80	120			
2-Hexanone		49.2	ug/L	20	98	70	130			
Iodomethane		5.32	ug/L	1.0	106	70	130			
Methyl ethyl ketone		47.6	ug/L	20	95	70	130			
Methyl isobutyl ketone		50.4	ug/L	20	101	70	130			
Methylene chloride		4.36	ug/L	1.0	87	70	130			
Styrene		4.96	ug/L	1.0	99	70	130			
1,1,1,2-Tetrachloroethane		5.84	ug/L	1.0	117	70	130			
1,1,2,2-Tetrachloroethane		5.16	ug/L	1.0	103	70	130			
Tetrachloroethene		6.16	ug/L	1.0	123	70	130			
Toluene		5.32	ug/L	1.0	106	80	120			
1,1,1-Trichloroethane		4.80	ug/L	1.0	96	70	130			
1,1,2-Trichloroethane		5.52	ug/L	1.0	110	70	130			
Trichloroethene		5.36	ug/L	1.0	107	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: Hydrometrics Inc-Helena
Project: 1273 City of Helena

Report Date: 07/09/09
Work Order: H09060204

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B								Analytical Run: 1SATURN_090618B		
Sample ID: CCV061809A	54 Continuing Calibration Verification Standard								06/18/09 09:34	
Trichlorofluoromethane		5.04	ug/L	1.0	101	70	130			
1,2,3-Trichloropropane		5.48	ug/L	1.0	110	70	130			
Vinyl acetate		4.80	ug/L	1.0	96	70	130			
Vinyl chloride		4.80	ug/L	1.0	96	80	120			
m+p-Xylenes		11.6	ug/L	1.0	116	70	130			
o-Xylene		5.60	ug/L	1.0	112	70	130			
Xylenes, Total		17.2	ug/L	1.0	114	70	130			
Surr: 1,2-Dichloroethane-d4				1.0	96	70	130			
Surr: Dibromofluoromethane				1.0	90	70	130			
Surr: p-Bromofluorobenzene				1.0	112	70	130			
Surr: Toluene-d8				1.0	113	70	130			

Method: SW8260B								Batch: R54352		
Sample ID: LCS061809A	54 Laboratory Control Sample				Run: 1SATURN_090618B			06/18/09 10:25		
Acetone		48.8	ug/L	20	98	70	130			
Acrylonitrile		52.8	ug/L	20	106	70	130			
Benzene		4.88	ug/L	1.0	98	70	130			
Bromochloromethane		5.24	ug/L	1.0	105	70	130			
Bromodichloromethane		5.68	ug/L	1.0	114	70	130			
Bromoform		5.00	ug/L	1.0	100	70	130			
Bromomethane		3.94	ug/L	1.0	79	70	130			
Carbon disulfide		5.48	ug/L	1.0	110	70	130			
Carbon tetrachloride		4.96	ug/L	1.0	99	70	130			
Chlorobenzene		6.20	ug/L	1.0	124	70	130			
Chlorodibromomethane		5.40	ug/L	1.0	108	70	130			
Chloroethane		4.40	ug/L	1.0	88	70	130			
Chloroform		4.96	ug/L	1.0	99	70	130			
Chloromethane		4.40	ug/L	1.0	88	70	130			
1,2-Dibromo-3-chloropropane		5.36	ug/L	1.0	107	70	130			
1,2-Dibromoethane		5.08	ug/L	1.0	102	70	130			
Dibromomethane		5.60	ug/L	1.0	112	70	130			
1,2-Dichlorobenzene		6.00	ug/L	1.0	120	70	130			
1,4-Dichlorobenzene		6.00	ug/L	1.0	120	70	130			
trans-1,4-Dichloro-2-butene		5.36	ug/L	1.0	107	70	130			
Dichlorodifluoromethane		3.69	ug/L	1.0	74	70	130			
1,1-Dichloroethane		5.00	ug/L	1.0	100	70	130			
1,2-Dichloroethane		4.52	ug/L	1.0	90	70	130			
1,1-Dichloroethene		5.64	ug/L	1.0	113	70	130			
cis-1,2-Dichloroethene		4.80	ug/L	1.0	96	70	130			
trans-1,2-Dichloroethene		5.32	ug/L	1.0	106	70	130			
1,2-Dichloropropane		5.68	ug/L	1.0	114	70	130			
cis-1,3-Dichloropropene		6.08	ug/L	1.0	122	70	130			
trans-1,3-Dichloropropene		5.92	ug/L	1.0	118	70	130			
Ethylbenzene		6.32	ug/L	1.0	126	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: Hydrometrics Inc-Helena

Report Date: 07/09/09

Project: 1273 City of Helena

Work Order: H09060204

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R54352
Sample ID: LCS061809A	54	Laboratory Control Sample				Run: 1SATURN_090618B				06/18/09 10:25
2-Hexanone		51.2	ug/L	20	102	70	130			
Iodomethane		5.12	ug/L	1.0	102	70	130			
Methyl ethyl ketone		51.6	ug/L	20	103	70	130			
Methyl isobutyl ketone		51.2	ug/L	20	102	70	130			
Methylene chloride		4.96	ug/L	1.0	99	70	130			
Styrene		5.44	ug/L	1.0	109	70	130			
1,1,1,2-Tetrachloroethane		6.44	ug/L	1.0	129	70	130			
1,1,2,2-Tetrachloroethane		5.64	ug/L	1.0	113	70	130			
Tetrachloroethene		6.16	ug/L	1.0	123	70	130			
Toluene		5.60	ug/L	1.0	112	70	130			
1,1,1-Trichloroethane		5.36	ug/L	1.0	107	70	130			
1,1,2-Trichloroethane		5.80	ug/L	1.0	116	70	130			
Trichloroethene		5.88	ug/L	1.0	118	70	130			
Trichlorofluoromethane		4.88	ug/L	1.0	98	70	130			
1,2,3-Trichloropropane		5.88	ug/L	1.0	118	70	130			
Vinyl acetate		4.44	ug/L	1.0	89	70	130			
Vinyl chloride		4.20	ug/L	1.0	84	70	130			
m+p-Xylenes		11.7	ug/L	1.0	117	70	130			
o-Xylene		5.60	ug/L	1.0	112	70	130			
Xylenes, Total		17.3	ug/L	1.0	115	70	130			
Surr: 1,2-Dichloroethane-d4				1.0	98	70	130			
Surr: Dibromofluoromethane				1.0	88	70	130			
Surr: p-Bromofluorobenzene				1.0	118	70	130			
Surr: Toluene-d8				1.0	110	70	130			
Sample ID: MB061809A	54	Method Blank				Run: 1SATURN_090618B				06/18/09 11:45
Acetone		ND	ug/L	20						
Acrylonitrile		ND	ug/L	20						
Benzene		ND	ug/L	1.0						
Bromochloromethane		ND	ug/L	1.0						
Bromodichloromethane		ND	ug/L	1.0						
Bromoform		ND	ug/L	1.0						
Bromomethane		ND	ug/L	1.0						
Carbon disulfide		ND	ug/L	1.0						
Carbon tetrachloride		ND	ug/L	1.0						
Chlorobenzene		ND	ug/L	1.0						
Chlorodibromomethane		ND	ug/L	1.0						
Chloroethane		ND	ug/L	1.0						
Chloroform		ND	ug/L	1.0						
Chloromethane		ND	ug/L	1.0						
1,2-Dibromo-3-chloropropane		ND	ug/L	1.0						
1,2-Dibromoethane		ND	ug/L	1.0						
Dibromomethane		ND	ug/L	1.0						
1,2-Dichlorobenzene		ND	ug/L	1.0						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: Hydrometrics Inc-Helena

Report Date: 07/09/09

Project: 1273 City of Helena

Work Order: H09060204

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R54352
Sample ID: MB061809A	54	Method Blank				Run: 1SATURN_090618B				06/18/09 11:45
1,4-Dichlorobenzene		ND	ug/L	1.0						
trans-1,4-Dichloro-2-butene		ND	ug/L	1.0						
Dichlorodifluoromethane		ND	ug/L	1.0						
1,1-Dichloroethane		ND	ug/L	1.0						
1,2-Dichloroethane		ND	ug/L	1.0						
1,1-Dichloroethene		ND	ug/L	1.0						
cis-1,2-Dichloroethene		ND	ug/L	1.0						
trans-1,2-Dichloroethene		ND	ug/L	1.0						
1,2-Dichloropropane		ND	ug/L	1.0						
cis-1,3-Dichloropropene		ND	ug/L	1.0						
trans-1,3-Dichloropropene		ND	ug/L	1.0						
Ethylbenzene		ND	ug/L	1.0						
2-Hexanone		ND	ug/L	20						
Iodomethane		ND	ug/L	1.0						
Methyl ethyl ketone		ND	ug/L	20						
Methyl isobutyl ketone		ND	ug/L	20						
Methylene chloride		ND	ug/L	1.0						
Styrene		ND	ug/L	1.0						
1,1,1,2-Tetrachloroethane		ND	ug/L	1.0						
1,1,1,2,2-Tetrachloroethane		ND	ug/L	1.0						
Tetrachloroethene		ND	ug/L	1.0						
Toluene		ND	ug/L	1.0						
1,1,1-Trichloroethane		ND	ug/L	1.0						
1,1,2-Trichloroethane		ND	ug/L	1.0						
Trichloroethene		ND	ug/L	1.0						
Trichlorofluoromethane		ND	ug/L	1.0						
1,2,3-Trichloropropane		ND	ug/L	1.0						
Vinyl acetate		ND	ug/L	1.0						
Vinyl chloride		ND	ug/L	1.0						
m+p-Xylenes		ND	ug/L	1.0						
o-Xylene		ND	ug/L	1.0						
Xylenes, Total		ND	ug/L	1.0						
Surr: 1,2-Dichloroethane-d4				1.0	105	70	130			
Surr: Dibromofluoromethane				1.0	92	70	130			
Surr: p-Bromofluorobenzene				1.0	119	70	130			
Surr: Toluene-d8				1.0	105	70	130			
Sample ID: H09060203-001AMS	54	Sample Matrix Spike				Run: 1SATURN_090618B				06/18/09 21:50
Acetone		93.6	ug/L	40	89	70	130			
Acrylonitrile		107	ug/L	40	107	70	130			
Benzene		10.6	ug/L	2.0	106	70	130			
Bromochloromethane		10.5	ug/L	2.0	105	70	130			
Bromodichloromethane		11.2	ug/L	2.0	112	70	130			
Bromoform		9.76	ug/L	2.0	96	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: Hydrometrics Inc-Helena

Report Date: 07/09/09

Project: 1273 City of Helena

Work Order: H09060204

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B		Batch: R54352								
Sample ID: H09060203-001AMS		54 Sample Matrix Spike		Run: 1SATURN_090618B				06/18/09 21:50		
Bromomethane		9.04	ug/L	2.0	90	70	130			
Carbon disulfide		9.92	ug/L	2.0	99	70	130			
Carbon tetrachloride		9.44	ug/L	2.0	94	70	130			
Chlorobenzene		11.5	ug/L	2.0	115	70	130			
Chlorodibromomethane		11.3	ug/L	2.0	113	70	130			
Chloroethane		8.96	ug/L	2.0	90	70	130			
Chloroform		10.2	ug/L	2.0	102	70	130			
Chloromethane		8.32	ug/L	2.0	83	70	130			
1,2-Dibromo-3-chloropropane		10.2	ug/L	2.0	102	70	130			
1,2-Dibromoethane		9.92	ug/L	2.0	99	70	130			
Dibromomethane		11.0	ug/L	2.0	110	70	130			
1,2-Dichlorobenzene		10.8	ug/L	2.0	108	70	130			
1,4-Dichlorobenzene		11.5	ug/L	2.0	115	70	130			
trans-1,4-Dichloro-2-butene		8.88	ug/L	2.0	89	70	130			
Dichlorodifluoromethane		6.95	ug/L	2.0	70	70	130			
1,1-Dichloroethane		9.92	ug/L	2.0	99	70	130			
1,2-Dichloroethane		9.52	ug/L	2.0	95	70	130			
1,1-Dichloroethene		10.6	ug/L	2.0	106	70	130			
cis-1,2-Dichloroethene		9.52	ug/L	2.0	95	70	130			
trans-1,2-Dichloroethene		10.9	ug/L	2.0	109	70	130			
1,2-Dichloropropane		11.7	ug/L	2.0	117	70	130			
cis-1,3-Dichloropropene		12.0	ug/L	2.0	120	70	130			
trans-1,3-Dichloropropene		11.1	ug/L	2.0	111	70	130			
Ethylbenzene		11.8	ug/L	2.0	118	70	130			
2-Hexanone		94.4	ug/L	40	94	70	130			
Iodomethane		9.52	ug/L	2.0	95	70	130			
Methyl ethyl ketone		105	ug/L	40	105	70	130			
Methyl isobutyl ketone		110	ug/L	40	110	70	130			
Methylene chloride		9.68	ug/L	2.0	97	70	130			
Styrene		11.5	ug/L	2.0	115	70	130			
1,1,1,2-Tetrachloroethane		11.4	ug/L	2.0	114	70	130			
1,1,2,2-Tetrachloroethane		10.4	ug/L	2.0	104	70	130			
Tetrachloroethene		12.1	ug/L	2.0	121	70	130			
Toluene		10.9	ug/L	2.0	109	70	130			
1,1,1-Trichloroethane		10.6	ug/L	2.0	106	70	130			
1,1,2-Trichloroethane		11.4	ug/L	2.0	114	70	130			
Trichloroethene		11.8	ug/L	2.0	118	70	130			
Trichlorofluoromethane		9.20	ug/L	2.0	92	70	130			
1,2,3-Trichloropropane		9.76	ug/L	2.0	98	70	130			
Vinyl acetate		4.94	ug/L	2.0	49	70	130			S
Vinyl chloride		8.40	ug/L	2.0	84	70	130			
m+p-Xylenes		22.6	ug/L	2.0	113	70	130			
o-Xylene		11.2	ug/L	2.0	112	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Client: Hydrometrics Inc-Helena

Report Date: 07/09/09

Project: 1273 City of Helena

Work Order: H09060204

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R54352
Sample ID: H09060203-001AMS				54 Sample Matrix Spike				Run: 1SATURN_090618B		
								06/18/09 21:50		
Xylenes, Total		33.8	ug/L	2.0	113	70	130			
Surr: 1,2-Dichloroethane-d4				2.0	100	70	130			
Surr: Dibromofluoromethane				2.0	91	70	130			
Surr: p-Bromofluorobenzene				2.0	116	70	130			
Surr: Toluene-d8				2.0	119	70	130			
Sample ID: H09060203-001AMSD				54 Sample Matrix Spike Duplicate				Run: 1SATURN_090618B		
								06/18/09 22:20		
Acetone		91.2	ug/L	40	87	70	130	2.6	20	
Acrylonitrile		100	ug/L	40	100	70	130	6.9	20	
Benzene		10.6	ug/L	2.0	106	70	130	0	20	
Bromochloromethane		10.2	ug/L	2.0	102	70	130	3.1	20	
Bromodichloromethane		11.5	ug/L	2.0	115	70	130	2.8	20	
Bromoform		11.1	ug/L	2.0	109	70	130	13	20	
Bromomethane		9.60	ug/L	2.0	96	70	130	6	20	
Carbon disulfide		10.0	ug/L	2.0	100	70	130	0.8	20	
Carbon tetrachloride		9.76	ug/L	2.0	98	70	130	3.3	20	
Chlorobenzene		12.6	ug/L	2.0	126	70	130	8.6	20	
Chlorodibromomethane		11.6	ug/L	2.0	116	70	130	2.8	20	
Chloroethane		8.56	ug/L	2.0	86	70	130	4.6	20	
Chloroform		9.76	ug/L	2.0	98	70	130	4	20	
Chloromethane		8.80	ug/L	2.0	88	70	130	5.6	20	
1,2-Dibromo-3-chloropropane		10.9	ug/L	2.0	109	70	130	6.8	20	
1,2-Dibromoethane		10.2	ug/L	2.0	102	70	130	3.2	20	
Dibromomethane		11.4	ug/L	2.0	114	70	130	3.6	20	
1,2-Dichlorobenzene		12.2	ug/L	2.0	122	70	130	13	20	
1,4-Dichlorobenzene		12.1	ug/L	2.0	121	70	130	4.7	20	
trans-1,4-Dichloro-2-butene		9.20	ug/L	2.0	92	70	130	3.5	20	
Dichlorodifluoromethane		6.98	ug/L	2.0	70	70	130	0.5	20	
1,1-Dichloroethane		9.28	ug/L	2.0	93	70	130	6.7	20	
1,2-Dichloroethane		9.44	ug/L	2.0	94	70	130	0.8	20	
1,1-Dichloroethene		11.2	ug/L	2.0	112	70	130	5.9	20	
cis-1,2-Dichloroethene		9.52	ug/L	2.0	95	70	130	0	20	
trans-1,2-Dichloroethene		10.2	ug/L	2.0	102	70	130	6.8	20	
1,2-Dichloropropane		11.3	ug/L	2.0	113	70	130	3.5	20	
cis-1,3-Dichloropropene		12.2	ug/L	2.0	122	70	130	2	20	
trans-1,3-Dichloropropene		12.2	ug/L	2.0	122	70	130	8.9	20	
Ethylbenzene		13.0	ug/L	2.0	130	70	130	10	20	
2-Hexanone		111	ug/L	40	111	70	130	16	20	
Iodomethane		10.1	ug/L	2.0	101	70	130	5.7	20	
Methyl ethyl ketone		101	ug/L	40	101	70	130	3.9	20	
Methyl isobutyl ketone		107	ug/L	40	107	70	130	2.2	20	
Methylene chloride		9.12	ug/L	2.0	91	70	130	6	20	
Styrene		12.1	ug/L	2.0	121	70	130	4.7	20	
1,1,1,2-Tetrachloroethane		12.3	ug/L	2.0	123	70	130	8.1	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: Hydrometrics Inc-Helena

Report Date: 07/09/09

Project: 1273 City of Helena

Work Order: H09060204

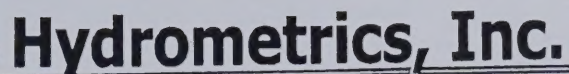
Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R54352
Sample ID: H09060203-001AMSD 54 Sample Matrix Spike Duplicate										Run: 1SATURN_090618B 06/18/09 22:20
1,1,2,2-Tetrachloroethane		11.9	ug/L	2.0	119	70	130	14	20	
Tetrachloroethene		13.0	ug/L	2.0	130	70	130	7	20	
Toluene		11.6	ug/L	2.0	116	70	130	6.4	20	
1,1,1-Trichloroethane		10.4	ug/L	2.0	104	70	130	1.5	20	
1,1,2-Trichloroethane		12.4	ug/L	2.0	124	70	130	8.1	20	
Trichloroethene		12.6	ug/L	2.0	126	70	130	5.9	20	
Trichlorofluoromethane		9.44	ug/L	2.0	94	70	130	2.6	20	
1,2,3-Trichloropropane		10.9	ug/L	2.0	109	70	130	11	20	
Vinyl acetate		5.92	ug/L	2.0	59	70	130	18	20	S
Vinyl chloride		8.32	ug/L	2.0	83	70	130	1	20	
m+p-Xylenes		24.1	ug/L	2.0	120	70	130	6.2	20	
o-Xylene		11.8	ug/L	2.0	118	70	130	4.9	20	
Xylenes, Total		35.8	ug/L	2.0	119	70	130	5.7	20	
Surr: 1,2-Dichloroethane-d4				2.0	93	70	130	0	20	
Surr: Dibromofluoromethane				2.0	86	70	130	0	20	
Surr: p-Bromofluorobenzene				2.0	123	70	130	0	20	
Surr: Toluene-d8				2.0	117	70	130	0	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.



3020 Bozeman Avenue • Helena, Montana 59601 • (406) 443-4150

HFORM-1-5/99

Return results & electronic copy to:

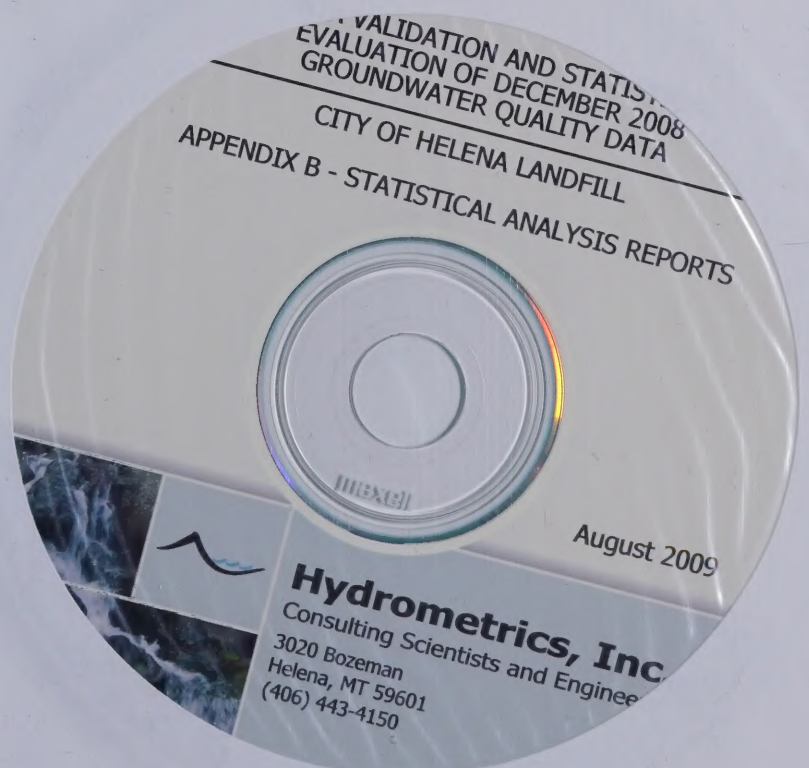
Split Samples:

☐ Accepted ☐ Declined

Signature _____

APPENDIX B

STATISTICAL ANALYSIS REPORTS



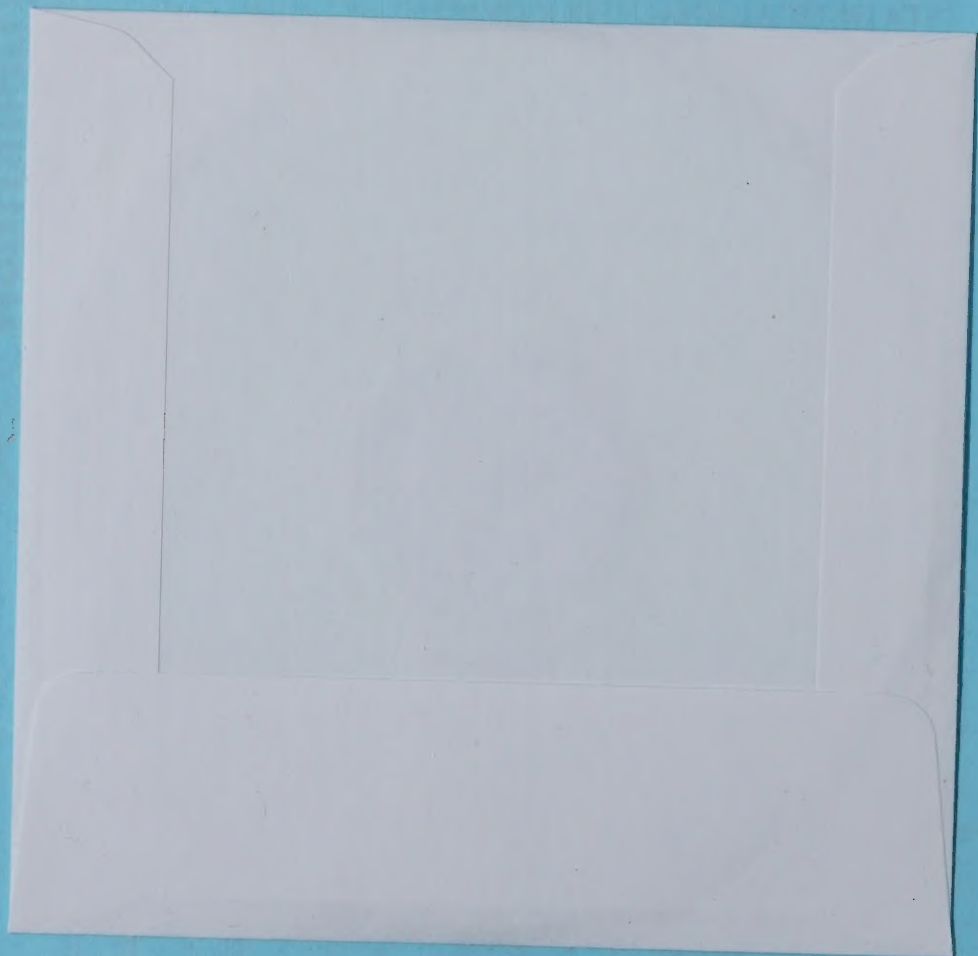
VALIDATION AND STATISTICAL
EVALUATION OF DECEMBER 2008
GROUNDWATER QUALITY DATA

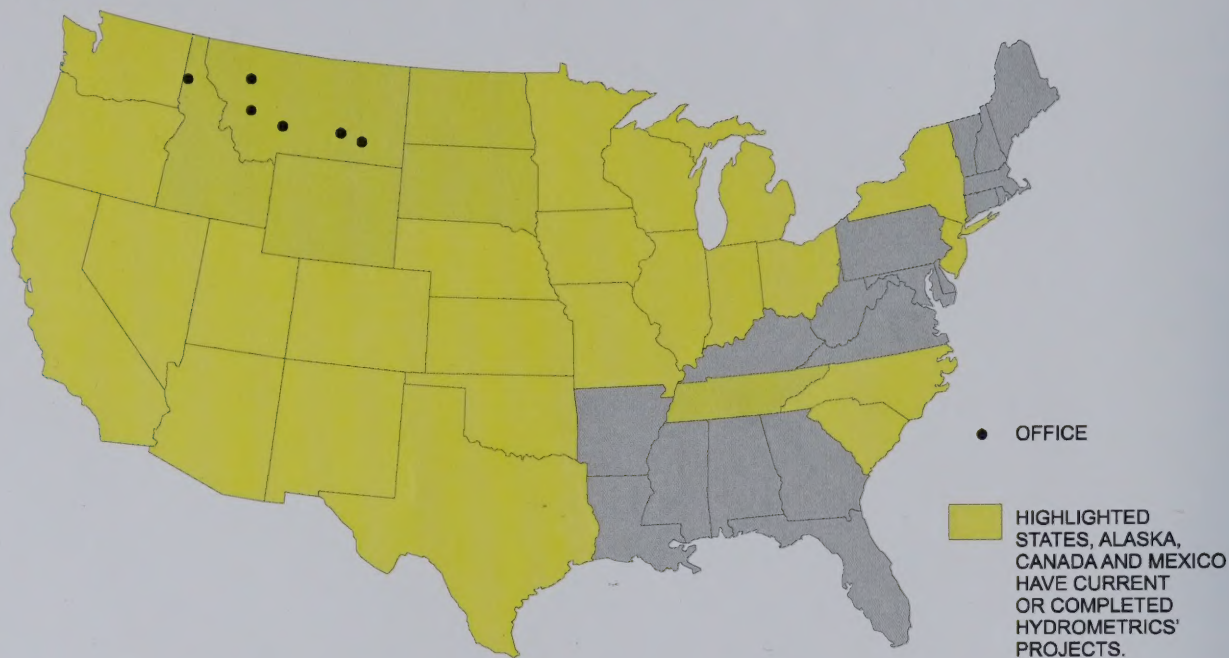
CITY OF HELENA LANDFILL

APPENDIX B - STATISTICAL ANALYSIS REPORTS

August 2009

Hydrometrics, Inc.
Consulting Scientists and Engineers
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(406) 443-4150





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